Issue 126 • 6th April 1991 • 88p

ARE YOU A £20,000 WINNER? Find out on page 58

NEW COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA
Drastic price cuts in the US - will the UK follow ?

ATARI
Those new ST Book and Pad specifications in full

PC
Amstrad scraps the 1512 and 1640 PCs **PLUS** Which PC survived a Scud attack?

MACINTOSH
The CD-I link is announced

GAMES
Where is the world's first University for programmers?

FORGED GAMES SCANDAL

EXPRESS SPECIAL REPORT

- Professional pirates flood console market - **p5**
- How all the top cartridges are cracked - **p8**

PLUS
REGULAR COLUMNS ON
PROGRAMMING
PD SOFTWARE
TECH TIPS
ELECTRONICS
& 36 PAGES OF
SHOPPING EXPRESS
BARGAINS ! ! !

Welcome
GeoWorks Ensemble
small business report
More People Turning to Home

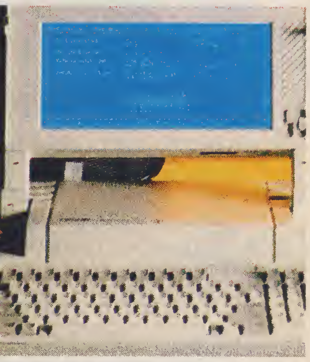
EXPRESS EXCLUSIVE

ENSEMBLE:

Is this the new contender for the Windows throne?

NEW PORTABLE POWER PRICING

The £500 hard disk laptop!



Future PUBLISHING
Your guarantee of value

frontend

edited by Colin Campbell

VIRTUALITY CRAZY

Everybody was going Virtuality crazy as the world's first Virtual Reality system for the leisure industry was launched last week. This was no standard computer game launch. Europe's media was there in force to find out what the hell all the fuss was about, and they weren't disappointed.

The Virtuality 1000SD brings a total 360 degree, three dimensional computer generated "experience" to anyone who pops his or her head into the alien-like headset.

Games on offer included a *Harrier* jumpjet simulation, and an *Elite* type space adventure. Players can see all around them, and are soon completely engrossed in the artificial world.

W Industries, the British company behind Virtuality, says the system has "undergone stringent health and safety tests" so buyers shouldn't have to worry about cricked necks. However, the state of their finances is a different matter – Virtuality costs £20,000.

● You'll be able to see what Virtuality is all about for yourself on the *Horizon* TV programme

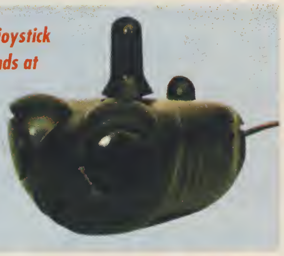
Doing the Scooby Doo

YEEEEEIIIKS! There's a spooky ghost doing the rounds in a secluded theatre/ sports stadium/ museum, and it's scaring the living wits out of everyone it sneaks up on. Just by chance our Scoobs and his gang of "meddling kids" have rolled up, and they're going to find out what the racket's all about.

Scooby is not overly pleased with the assignment. He can expect to be locked in cupboards, left alone in dark rooms with his chicken hearted pal Shaggy, and bored to tears by the relentlessly nosey Thelma.

And, at the end of the day, the ghost just might turn out to be a scowling man with a duvet on his head who has a special reason for trying the same trick every other criminal on *Scobby Doo* has for the past ten years.

If this sounds like fun to you, then check out the new *Scooby Doo* game from Hi-Tec. It's out for £3.99 on the 8-bits and £7.99 on the 16-bits later this month. ■



• This creation could be the ugliest joystick yet devised. It comes from our friends at Cheetah, and we're told that it's "the most comfortable controller available".

Called The Bug, it will be allowed into the shops later this month for £14.95.

● Soon you'll be able to conduct a full orchestra from the comfort of your PC. Professor Stan Matthews, from Stanford University in California, has developed a pair of electronic conductor batons to bring out the Bernstein's in you.

The system features a floppy disk with musical score which is connected to a synthesiser and two batons. By waving the right hand baton you can control the time of the orchestra's beat, while the left hand will lead expression and dynamics. ■

Giants backCD-I

Japan's leading software, publishing and consumer electronics companies have thrown their weight behind Philips' Compact Disc Interactive standard, CD-I. Representatives from 183 Japanese companies met in Tokyo late last month to discuss their approach to CD-I. Philips, Sony and Matsushita will all be releasing CD-I players of their own within the next year, and they're all keen to make sure there's plenty of software available.

The battle between CD-I and Commodore's CDTV standard is likely to be a fierce one, with CDTV having the advantage of an earlier release date (now scheduled for early summer).

But Philips and its allies have managed to generate great interest among companies as different as Citroen and Disney.

CD-I is a simple way of accessing masses of cross-referenced information presented in an easy to digest form. It also promises movie quality games. Speech, text, graphics and video can be mixed on one CD.

Meanwhile, Apple has set up a special office in Tokyo to develop a CD-I device for the Macintosh. ■

Atari ATW school deal

In an attempt to woo buyers in the lucrative educational sector, Atari is offering its ST based Transputer Workstation to schools and colleges for half the normal price.

The top end ATW can run at 400 million instructions per second, and there are plenty of opportunities to configure the machine to a user's own requirements. The new price is £2,500.

A spokesman for Atari explained: "The ATW is already in the majority of UK universities. We just want to broaden its appeal." ■

PICK UP A LOW COST LASER

You've probably contemplated blowing all your savings (and more) on a fantastic new laser printer. And then the reality of being broke for the next three years comes home.

Now Mannesman Tally has launched a low-cost laser printer, which the firm is ready to sell for just £699.

Mannesman says that the laser is being targeted at the home user who wants tip-top prints, without the price penalty.

The MT904 includes PC printing standard HP LaserJet IIP and has one of the smallest footprints in its class (36.5cm x 40.5cm). Paper handling includes a 100-sheet feeder and manual feed as standard.

For more demanding applications, a 300-sheet bin is available that sits under the printer, saving more space.

The machine includes 14 resident fonts, and 512Kb memory as standard. MT estimates that the MT904's life is 150,000 pages at a daily workload of 125 pages per day.

For more information call 0734 788711. ■

Jez and Argonauts finish long haul

Argonaut Software – the games development team run by ex-whizzkid Jez San, and responsible for such titles as *Starglider II*, has nearly finished its newest game, three and a half years after starting the project.

Birds of Prey, formerly *Hawk*, will be published by Electronic Arts within the next few months. It's an advanced multi-aircraft flight simulation with "realistic flight dynamics and graphics".

Birds is due first on the Amiga (1Mb only) and then PC. No decision has been taken on whether or not to launch onto the ST. ■

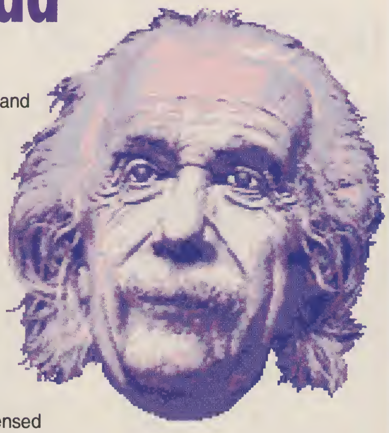
Einstein isn't dead

The Einstein User Group – which boasts a membership tally of 1,500 – is to hold a show next month featuring all that's best for the old machine.

The All Micro News Show at the Ratcliffe-on-Soar Sports Club on May 11 will include hardware, software and information on the Einstein, as well as plenty of goodies for other mainstream and obscure pieces of hardware.

Organiser Jason Allum said: "It's a yearly event, but it's not just for Einstein users. There'll be plenty of interest to ST, Amiga and PC owners as well as those hooked on the Coupé, Oric and others."

Entrance fee is 50 pence and the doors are open between 10.30am and 4.30pm. There's an "electronic bring and buy" sale, loads of bargains, and a licensed bar. Call the Einstein User Group on 0473 272002. ■



CONTENTS

REVIEWS

The Pictureware library
Cheap pre-digitised graphics for the Amiga – page 10

The world's cheapest hard drive laptop
Pick up a real bargain – the Epson Equity costs only £500 – page 49

Looking for a ST hard drive?
One of the best value for money deals available – page 54

EVERY WEEK

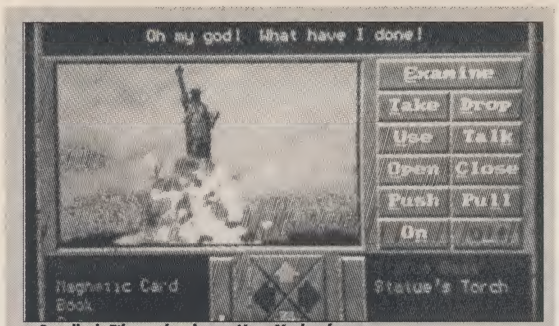
News – pages 4-8

Games Week
Hot tips and news, plus *Brat* review – page 51

Competition
Could you be a winner? We name names – page 66

SHOPPING EXPRESS

Letters **13**
Mac **14**
CPC **15**
Amiga **18**
Archimedes **20**
C64 **24**
Spectrum **25**
ST **26**
Whole Wired World **28**
Circuit City **29**
Tech Tips **32**
Centrefold **36**
On-line **46**
Programming **43**
PD Column **44**



Oh my god! What have I done!

• *Deadlock Files: a hard core New York adventure .*

Big thriller for Big Apple

An adventure game set in modern day New York and revolving around a complex plot to overthrow the US Government is to be launched by Accolade.

Conspiracy: The Deadlock Files is grandly described by the company as "a stylish thriller in the tradition of Hitchcock and Le Carre". It's a fully digitised yarn featuring 350 images of the city in glorious 256 colour graphics.

You're an innocent blamed for the murder of a top CIA man. His killers are, in fact, a gang of highly unpleasant financiers bent on the destruction of the American Government.

Within 24-hours you have to find seven files hidden around New York. You'll visit the Empire State and Wall Street, but with the cops, the CIA and your greedy enemies on the case, there won't be much time for sightseeing. It's out on the PC this week for £29.99. ■

Arnor swings behind CPC

After a long gap, Arnor has launched an addition to the *Protext* family for the Amstrad CPC.

Protype is a print enhancer for Epson compatible printers.

It includes seven complete fonts which can handle many of the characteristics of over 40 European languages. *Protype* will be available soon with a retail tag of £30. Call 0733 68909. ■

US cash flows for business software

Americans are spending more and more on business software, according to the Software Publishers Association (SPA).

In the last three months of 1990 more than $1 billion was spent on PC and Mac software – up 22 per cent on the year before.

Sales of DTP software increased by an incredible 68.2 per cent, while database software was up 65.8 per cent. MS-DOS software sales went up 18 per cent while Macintosh sales increased by 12.5 per cent.

Spurred on by the launch of Windows 3, sales of Windows-based applications were up by 198 per cent; that sector now accounts for 10 per cent of all PC software sales.

Americans spent $4.6 billion on business software – 26.2 per cent more than in 1989. ■

Will Commodore follow suit in the UK?

AMIGA: US PRICES TO BE SLASHED

Commodore UK was last week deflecting speculation that it is about to cut the prices of its top-end Amigas. This follows drastic cuts across the Amiga 2000 and 3000 ranges in the US.

The American company has slashed the Amiga 2000 by 16 per cent from $1,895 to $1,599, while the hard disk version is down 26 per cent from $2,699 to $1,999. The power station Amiga 3000 has been reduced by ten per cent to $2,999, while the Amiga 3000-25/50 has been cut by $500 – $3,999 to $3,499.

Commodore US's decision to make its power Amigas much more competitive sparked off rumours that a price cut would be made in the UK. However, Andrew Ball, Commodore UK's spokesman, declined to comment directly on the speculation.

He said: "Yes, the Americans have cut their prices. But it's up to them what they do, and it's up to us what we do. When we're ready to make any price changes we'll let you know."

Commodore has always been keen to promote its expensive Amigas as worthwhile options for the business user; the US company has also decided to drop the prices of its MS-DOS compatible bridgeboards which allow Amiga users to run standard PC software.

• *Amiga 2000: price drop in the US.*

The A2088D XT bridgeboard has been reduced 29 per cent from $699 to $499 and the A2286AT is down 50 per cent from a pricey $1,599 to $799.

Even so, Commodore UK cannot be swayed by the decision of the larger American company.

The British market has its own quirks, and the presence of the successful Amiga 1500, which acts as a halfway house between the A500 and A2000, makes it difficult to drop the price of the A2000. ■

Computer aids design of Heseltine

Michael Heseltine had to rely on more than his wits when devising an alternative to the doomed Poll Tax. Senior party members have been using sophisticated computer technology to predict the effects of various alternatives.

The Department of the Environment has been feeding statistics into its DEC network. By running PC modelling software, it has predicted how various constituencies would react to the changes.

Not surprisingly, the Tories aren't keen to share the details of their number crunching exercise, but John Major's government is known to be anxious about its image in borderline constituencies.

One of the computer's tasks has been to state which election date would be most beneficial to Mr Major. Computers helped the former PM, Margaret Thatcher, to decide on the date of the 1987 general election. ■

•*The man behind the new 'Heseltax'.*

Soviet chip beats Intel?

Soviet chip makers are claiming to have developed a processor able to perform calculations 20 times faster than American chips.

The Minsk-based Integrated Corporation claims to have swept aside Intel in the race to produce better and faster computer chips. The company made its statement at a special Soviet/American research and development conference held in San Francisco last month.

Integrated had hoped that the Americans would be eager to tap into this technology, but many are doubtful that it really exists. Professor Richard Jaeger of Alabama University met representatives of the Soviet company, and discussed the new chips. He said: "Based on what they showed me the idea appears sound, but details on the spec sheet were minimal."

Intel, very proud of its achievements in the processor industry, is not convinced. East Europe business development manager, Simone Cool, said: "I won't believe it until I have seen a viable product. They still can't manufacture 286 chips in volume – so I doubt if they could achieve this." ■

Wyse up

Wyse has launched a top-of-the range 486 to add to its Decision family of IBM compatibles.

The 25MHz monster boasts an internal 8Kb memory cache as well as an external 128Kb cache, so the processor can access RAM at full speed for up to 98 per cent of the time – and a Weitek 4167 math coprocessor handles heavy duty calculations. There are 16Mb RAM on the motherboard and seven slots for peripherals/accessories.

Wyse reckons its beast is "priced favourably" in comparison with competitors' 386 machines. "The demand for 486 machines is growing," offered a spokesman. Decision 486 retails at £2,995. Call 0734 342200. ■

• *Wyse 486: full speed ahead.*

Elite 1.5 on the way

MicroProse is to release a touched-up version of space-trading game *Elite*, in anticipation of the long awaited release of *Elite II*.

Elite Plus is being described as a 'halfway house' between the original and the sequel. The updated *Elite* has all the addictive gameplay of the original, but features cleaner and more colourful graphics.

"The game needed to be revamped," explained marketing manager Peter Jones. "We've updated the graphics, tuned the gameplay, put it in a new package and updated the manual.

"We're not just tweaking it," he added. "This is real virgin territory we're entering here."

David Braben, author of *Elite*, is still beavering away on the sequel. That isn't expected to arrive until next year.

Elite Plus will be launched on the PC at the end of this month with a price tag of £34.99. ST and Amiga versions will follow if the PC game is a winner. ■

Counterfeit cartridges sold at third of normal price

CONSOLE PIRACY SHOCKS INDUSTRY

Thousands of counterfeited copies of top console games, which are hardly distinguishable from the real thing, are being sold in the UK.

Pirated copies of hit Sega Megadrive cartridges are passing hands here for about £15 – a third of the normal retail price. But the software industry – in association with the Federation Against Software Theft (FAST) – is moving swiftly to combat this latest strain of piracy.

• *Alexander: 'we must take action'.*

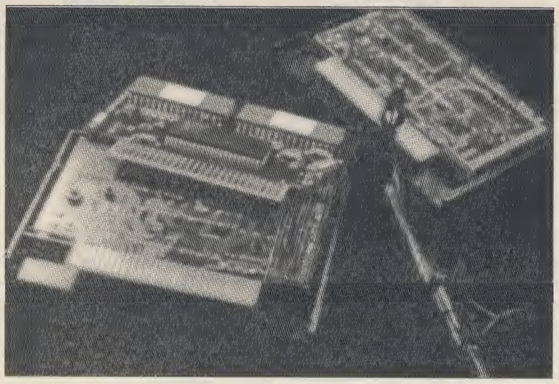
FAST, and Sega distributor Virgin, say that charges are being brought against various individuals. But Virgin Games boss Nick Alexander admitted that the problem is growing.

He said: "We have heard about this and legal action is already underway. This is a lot different from playground pirates and home users copying a friend's software because, in those cases, it is just not feasible to take legal action.

"We want to put a stop to this before people start thinking that there are easy pickings to be had."

The news that villains are already exploiting the mushrooming console market has sent shudders through the cartridge producing community because, spurred on by the promise of a piracy-free medium, software developers have been actively promoting games consoles for years.

Now the cartridge market has attracted professional pirates who are not only prepared to copy games, but are also duplicating packaging and manuals.


• *Inside out: cartridges can be copied in a matter of minutes.*

Bob Hay at FAST revealed that 98 charges are soon to be brought against individuals involved in one operation. However, he refused to comment any further arguing that it would not be wise to "put people on a warning".

He said that the Megadrive is attracting most activity at present, but said that other consoles had attracted interest.

Until recently the problem was confined to the Far East, and imports were a rarity. But unfortunately cartridge crackers in the UK have learned how to duplicate the games very cheaply. ■

● Turn to page eight to find out how cartridges are being cracked. There's an exclusive interview with a console pirate – and the people who stand to lose the most also speak out...

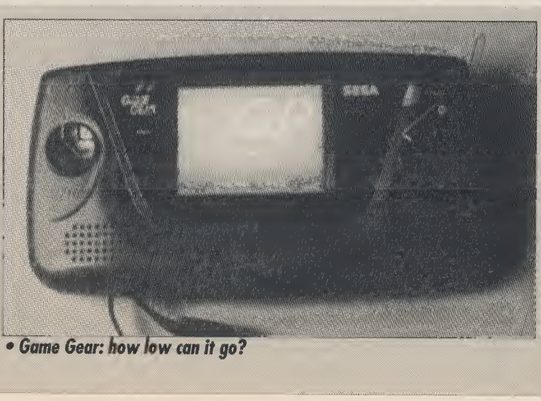
Cheap Game Gear

The handheld games console price war is becoming ever-more bloody. So much so that last week the trade press reported Virgin is considering introducing its Sega Game Gear for a very tempting £79.

This move comes in response to a recent announcement by Atari that it would be soon selling a 'bare bones' version of the Lynx for the same price.

Virgin is now likely to follow suit with its own handheld game console which, the company insists, is much handier and easier to use than the larger Lynx.

A more expensive version of the Game Gear will be available for buyers who want relevant cables and a bundled game. The Game Gear is due to be officially launched here by mid-summer. ■


• *Game Gear: how low can it go?*

International talks to limit supercomputers

Leading technological nations could be signing a new agreement which aims to limit the spread of supercomputers.

Japan, America and many European countries are growing increasingly concerned that their supercomputers are being used by certain countries for the development of high tech weaponry.

The Americans and Japanese are currently holding secret negotiations to renew their seven-year old accord under which neither country is allowed to sell certain computers.

Both countries are keen to update the terms of their agreement and to include countries now producing relevant supercomputers.

A US Government official told the New York Times: "We don't want supercomputer exports to go unencumbered from those countries."

Even so Japan and the US are having difficulty ironing out a few disagreements over the definition of a supercomputer. The Japanese say that the definition of a supercomputer should be set at two billion calculations per second, and that a mainframe at 800 million calculations per second.

But the Americans think those figures are too high and they want the limit to be 300 million and 100 million respectively. ■

Two for one Lotus deal

Lotus is to bundle Lotus *1-2-3* 3.1 with the word processor *Ami Pro* at a special low price.

Bought seperately the two packages would set you back £900, but they're being offered together for £450 until the end of June. Existing *1-2-3* owners can upgrade for £140.

A Lotus executive said, "PC users are getting the industry standard spreadsheet with the best analytical capabilities, formating, printing and hard copy output available – with a first class word processor."

THE WEEK IN VIEW

Is Commodore about to push its high-end Amigas into the professional fray? *Amiga Shopper* editor Bob Wade argues that it's about time....

If Commodore does decide to cut the prices of the A2000 and A3000 in the UK it is a move that can only help to establish the Amiga as a viable low-cost alternative in many areas of professional use.

However, this is only one of many measures that need to be taken to firmly establish the higher end Amiga models as 'serious' computers – as opposed to the 'games console' image that the A500 has inaccurately picked up.

The Amiga is already the obviously affordable choice at the bottom end of the video production market, but it could become much more firmly established throughout that area if specific bundles were put together (including genlocks and other required hardware and software) and a significant amount of video trade press advertising done.

Those involved in video work that I have spoken to have nothing but praise for the Amiga until you start talking about the level of support they get from Commodore. I am not suggesting Commodore is not doing anything – it's just not doing enough.

Video could be to the Amiga what desktop publishing was to the Apple Mac.

The concept of the Amiga as an alternative to the PC in a conventional business sense is a non-starter. But what it can provide, from the A1500 upwards, is a degree of PC compatibility that should make it an automatic choice for anyone working in creative media – if only because its acknowledged graphic power is combined with the ability to use much of the top PC software.

Commodore is clearly aware of the need for the Amiga to specialise in certain fields – the launch of the A3000 UX as a Unix workstation is evidence of that.

However, this needs to be followed through. As well as making price cuts Commodore should provide the bundles and the support necessary to make the Amiga the obvious choice for professionals in video, graphics, music, education, DTP.

If Commodore get it right, the possibilities are huge. ■

Disk library

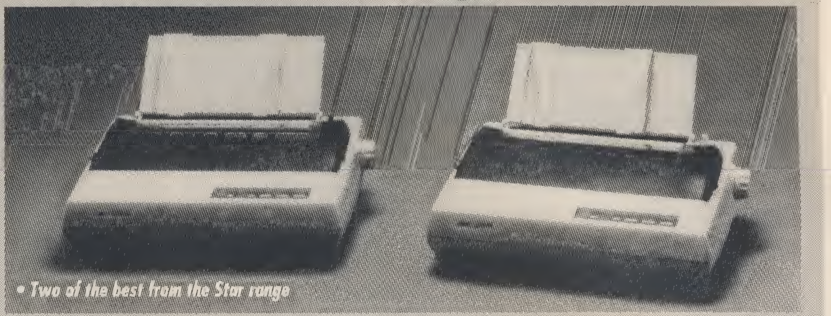
Microsoft was at last week's CD-ROM Expo in Washington to unveil a multimedia reference library on CD, featuring an encyclopaedia, thesaurus, speaking dictionary, two quotations reference books, an atlas and an almanac.

Bookshelf for Windows **will run on any PC running Microsoft Windows with multimedia extensions. It retails in the US for $195, and should be launched here in a few months.**

Microsoft also unveiled *Multimedia Beethoven: The Ninth Symphony* which features a digital stereo audio track and allows the user to explore any section from the four movements of the symphony.

There's also a chance to delve into the composer's life history, or study the architecture of the symphony. *Beethoven* costs $80. ■

Catch a falling Star...


• Two of the best from the Star range

Star has sliced the prices of its Professional series of 24-pin dot matrix printers.

All four are described by the company as 'workhorses' which will serve the professional user well.

The FR10 has fallen from £459 to £399, the FR15 is down from £599 to £499 and the cost of the XB 24-10 has been shaved from £599 to £499.

At the top of the Professional range, the XB 24-15 has come down £200 from £789 to £589.

Outside the Pro series the LC15 – which is actually a wide carriage version of the LC10 – is down £100 to £299.

Buyers of any of Star's printers will be offered a free printing pack including colour ribbon worth £40. ■

How a PC survived Scud hit on Dharan warehouse

GULF VICTORY FOR COMPUADD

American PC manufacturer CompuAdd began boasting last week that its kit had been acknowledged as 'the standard PC of the Gulf War theatre'.

A letter to CompuAdd from the deputy chief of staff, US Army Command, begins: "This is just a short note of appreciation for the quality of your model 425 computer that this headquarters was fortunate to use during Operation Desert Storm and Operation Desert Shield."

It seems thousands of CompuAdd PCs and laptops were in evidence throughout the campaign and "only two failed to boot up, having been damaged in transit".

The letter goes on: "An example of how well your computers are constructed came to light during the unfortunate incident when the Scud missile impacted on the tin-sided warehouse in Dharan. One of your Model 425 computers was inside and was literally blown out the side of the building, landing some 50 feet away.

"Although the impact damaged a couple of boards, the case remained intact and we were able to repair it... it was remarkable that it did not disintegrate, as it was very close to the point where the missile impacted."

Most of the 425s were used for project management, communications and administration in rear support areas, although some laptops were taken into Iraq by front line troops during the ground invasion.

As part of a £17 million deal with the US Central Command in Saudi Arabia, CompuAdd supplied 2,500 PCs to the Gulf, including hundreds of 316SL laptop machines.

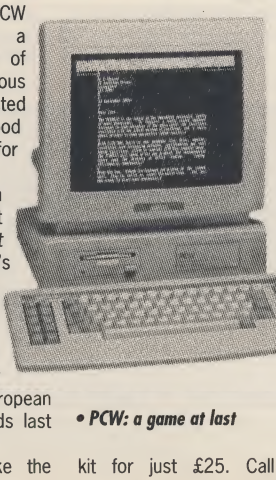
Texas based CompuAdd also supplied full networks for use on American navy ships. ■

PCW's flight of fancy

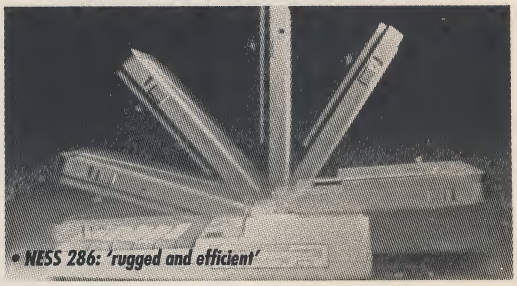
There was a time when PCW owners could expect a respectable release rate of games. But that famous green screen hasn't attracted too much in the way of good quality leisure software for the past couple of years.

Now Digital Integration is to lauch its popular flight simulation *F16 Combat Pilot* for Amstrad's workhorse. *F16* has already appeared on just about every home computer format, and it picked up the prize for best flight sim at the European Computer Software awards last year.

PCW owners can take the cockpit of a £20 million piece of kit for just £25. Call Digital Integration on 0276 684959. ■


• PCW: a game at last

NESS on your lap


• NESS 286: 'rugged and efficient'

NESS Computers has released a 286 laptop, which it claims is a 'rugged and efficiently portable'.

Measuring about a foot square, the NESS 286 operates at 16MHz and comes with 1Mb of RAM on board, expandable to 5Mb.

For intensive maths processing there's the optional 80287 mathematical co-processor.

As well as the normal 3.5-inch floppy drive there's a 20Mb hard disk, and you can connect an external disk drive through the 25-pin D-type connector.

It retails at £1,099.

You can contact NESS on 081-452 8233. ■

PC1512 and 1640 are wiped off the price list

AMSTRAD FIRES THE OLD GUARD

Amstrad has confirmed that it is phasing out the machines which originally launched the company so successfully into the professional PC market.

The PC1512 and PC1640 – released in 1986 and 1987 respectively – have been wiped off Amstrad's price list. A spokesman for the firm said buyers could now hunt around to find the best prices available as Amstrad no longer has a recommended retail price for either machine.

In addition the highly acclaimed Generation 3 PCs are to be chopped in price. Cuts range from £100 for the bottom end unit to £250 at the top of the range.

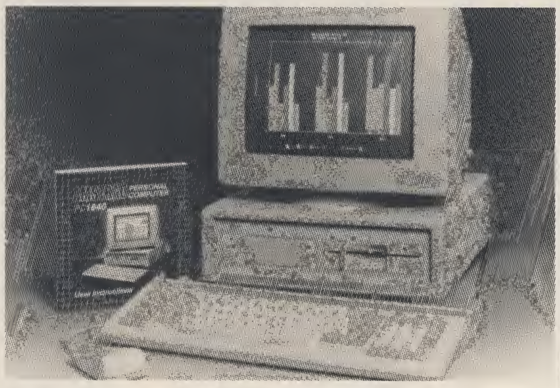
The entry-level 3086 with single drive is down by £100 to a very reasonable £350, while the same machine with dual drive and hard drive is also down – by £200 to £600.

The faster 3286 single drive unit has been dropped by £150 to £500 while the hard drive, dual floppy version is down £250 to £750.

The new price structure will come into effect on April 20th.

Amstrad has decided to continue its policy of bundling the 3086 with the DMP3160 printer and *Migent Ability* software, and the 286 will still be sold with a free copy of Lotus *1-2-3*.

A spokesman for Amstrad explained: "Although we are currently running a number of successful software and printer bundles, we feel that we must make a statement on the Generation 3 price, giving the range an ultra-competitive edge over the competition."


• PC 1640: great for its time, but was dating badly

On the phasing out of the PC1512 and 1640 a spokesman said: "Those machines are no longer listed, although there are stocks still going through the distribution channels – so you'll be able to pick them up at very competitive prices.

"Both PCs did very well in their time, but now the company must move on."

The 1512 was the first PC to be offered at a price which came well within many small businesses' budgets, and it also appealed to home users. In turn, the 1640 offered more for a similarly reasonable price. ■

Agenda and modem: phone link

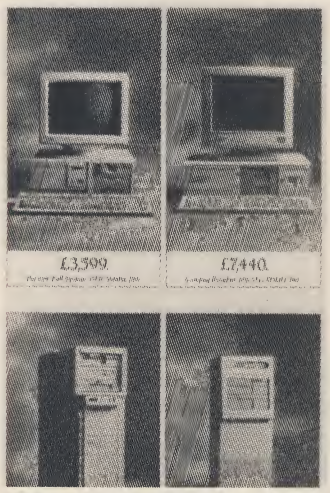
Modem on the Agenda

A data and sendfax modem for the handy Agenda pocket computer has been released by MicroWriter Systems.

Users will be able to send information down telephone lines, or even link up to a printer. The Agenda is one of the few computer products to win the UK Design Council award, awarded in 1990 for its ergonomic one-handed keying system.

The Agenda Modem, developed by Dataflex on Microwriter's request, is a conversion of Agenda's pocket modem for PCs. It offers conventional V21/22/22bis (300-2400bps) operation and costs £349. ■

Dell ad ban



• The ads: Dell is to fight on

Dell Computer has been ordered to stop publishing adverts comparing its PCs to Compaq's.

A judge in the High Court Chancery Division ruled on 19 March that the ads could not be published until a full trial had been heard.

At the end of January Compaq slapped a writ on Dell to prevent Dell from publishing the ads. Under British law comparitive advertising is allowed so long as it is fair and accurate.

But this first round set-back for Dell won't stop the firm from fighting to keep the ads, which have been running since 1987, and invariably feature Compaq and Dell PCs lined up, with technical specifications and prices compared. ■

Take your time

A new PC program will allow you to instantly switch between up to 99 programs or files at once.

***Switch-It* 3.23 from Guildsoft cuts out frustrating waiting time. For example it will allow you to rapidly cut and paste between different spreadsheets, databases and word processors.**

"Both its switching and data transfer capabilities can save the average PC owner an enormous amount of time," said project manager Mike Holman.

***Switch-It* will run on any PC with a minimum of 512K of RAM and costs £79. Call 0752 251155. ■**

Olivetti boss' trial

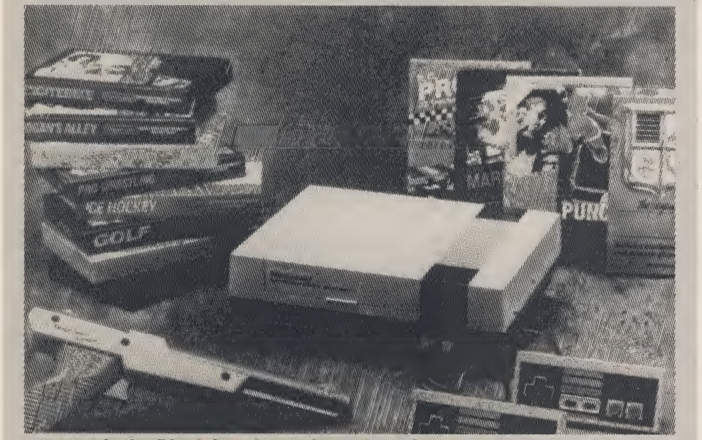
Olivetti chairman Carlo De Benedetti is to stand trial on criminal charges arising from the collapse of one of Italy's largest banks in 1982.

The Milan Appeal Court upheld an appeal against an earlier ruling clearing De Benedetti of criminal charges.

Before taking over at Olivetti, De Benedetti had held the vice-presidency of the Ambrosiano bank for two months just before its spectacular collapse.

Ambrosiano – the Pope's bank – went down owing $1,300m. 35 people have already been convicted over the crash. ■

Nintendo to open Tokyo games school


• A new school will be dedicated to students who wish to master the NES.

Nintendo has set up a special university dedicated to train programmers to produce games for the Japanese company's NES console and Super Famicom.

Thousands of budding games programmers are likely to apply for one of the 30 places in the Tokyo school. Those who pass through can expect a healthy career crafting some of the best known games in the world.

The video games school is a joint project between Nintendo, and an advertising agency called the Dentsu Group. Nintendo has called the school 'Mario' after its most famous game character.

Already, Nintendo has been running a once-a-week learning course for would-be Nintendo programmers, and after the first year many of the 16 students are writing their own games. ■

"It's easy... Every system is copyable."

OUTRAGE AT COUNTERFEIT CARTRIDGES

The next console cartridge you buy could be an illegal pirated clone. Here, Rik Haynes discovers how the cartridges are cracked, and what the industry response is likely to be...

Counterfeit cartridges have arrived in such a short space of time, and with such a degree of professionalism, that the software industry has been taken almost unawares.

Some of the copies being sold on market stalls around the country are exact clones of the originals and even software houses and game developers cannot tell the difference. In fact, the only real difference is price.Pirated copies of *Strider* on the Sega Megadrive sell for around £15 instead of the official price of £45.

FAST (Federation Against Software Theft), an organisation funded by software companies, is keen to keep the pirates off-guard. Chief executive, Bob Hay, said: "We're dealing with enquiries relating to cartridge-based software, but I wouldn't say that the market is flooded."

Hay refuses to comment on the size of the problem, the origin of these clones and the length of time they have been available on the market. Nobody has yet been prosecuted for copying cartridge games. "We are dealing with allegations involving Sega Megadrive cartridges and Sega isn't the only cartridge-based product involved," reveals Hay. "It's too early to say anything further. I don't want to put people on warning. One case will involve 98 charges being brought against the people concerned. They are not yet a matter of public record."

'Terry', a self confessed cartridge counterfeiter from the South East, told us any game available on Megadrive, NES, PC Engine, Nintendo Gameboy and the Sega Master System can be copied in less than 10 minutes – provided you have some technical know-how and the right hardware and software. The Commodore 64GS and Amstrad GX-4000 games systems have largely remained untouched because there is not as much profit in copying games on less popular consoles.

"It is easy. It only takes me 30 seconds to read a four-megabit cartridge and roughly 10 minutes to burn it out onto an EPROM," he says. "Every system is copyable. I do it for money. It takes me approximately £5 to make a cartridge which I then sell for £15. You can alter the code, but you don't because it is commercial. They're copied professionally, they look identical to the original. You can't tell the difference. Some are even sold in shops at full-price. "*Strider* is currently top of the pirated charts. The plastic cases, covers and stickers are supplied by a company in Glasgow. You have to go to a professional EPROM specialist with any cartridge over four-megabits in size."

BABBLE BUSTER

- **An EPROM programmer is an electronic device that connects to your computer and reads program files from either the computer's memory or a disk and writes them to an EPROM.**
- **An EPROM is an Erasable and Programmable Read Only Memory chip. High intensity ultra violet light will erase it and leave it 'clean' much in the same way that a drive can 'format' a disk and leave it clean.**
- **The clean EPROM is placed in the programmer where the program is 'burned' on to it electronically. This leaves the EPROM programmed and stable and the software burned on the EPROM is safe there as long as no high intensity ultra violet light is played on it. Any ROM or EPROM can be read by the programmer and the file saved to memory or disk for burning into an EPROM.**
- **EPROMS are used by hackers and crackers as a simple way of transferring ROM software to a medium that can be built into pirate cartridges.**

ALL YOU NEED IS...

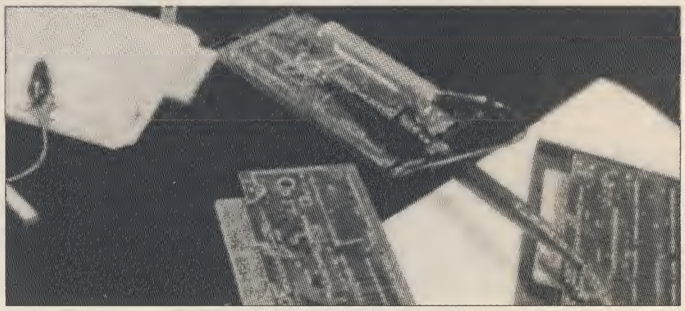
Electronic Arts is one of the leading publishers of Megadrive games in Europe and America. Recent titles have included such hits as *John Madden American Football* and *Populous.*

Simon Jeffrey, spokesman for Electronic Arts, said: "Yes, it is easy to copy cartridges. Basically all you need is an EPROM burner. A bit of hardware that allows you to burn code onto an EPROM, a programmable cartridge. They're hard to get hold of and vastly expensive.

"Theoretically, someone could get a cheap EPROM burner from a hardware magazine for a few hundred quid provided you had the technical know-how to make it work. For any kind of extensive mass-copying operation you need to buy the EPROM's from Taiwan. You need a lot of money and to be extremely brainy."

We asked Jeffrey if software companies can prevent piracy. "We don't have security chips in our carts the way that Nintendo does. We don't see any need. Any security measures are seen as a big challenge for the hackers. No matter how clever you are, there's always someone more clever who can bust it. There's no point in investing large amounts of money into something which is going to be broken. You're just throwing money away.

"The people who buy console hardware and software are less technically minded than high-end users of Amigas because there's less opportunity for them to get inside and actually program on it. You can't program or copy a console without extra hardware. It is our goal to provide quality entertainment software to the mass-market. We see the Megadrive as an exciting hardware platform and market. There's not much that worries us yet because this isn't as big a problem as disk-based copying.



• *Cracking a game cartridge takes a matter of minutes.*

"I know there's a few dodgy operations in Taiwan getting hold of Japanese carts. Some are duplicated, others are grey-buying Japanese carts and dumping them on the European and American markets. Counterfeit packaging is very rarely up to scratch, they have poor quality print and lack of full-colour artwork."

BLOW-CARTS

Peter Molyneux is boss of Bullfrog, the games development team responsible for *Populous* and *Powermonger.* His flair for original arcade-strategy games has met with considerable world-wide success on both computer and console formats.

"I haven't seen these counterfeit carts, but I know that they're around. Not so much in this country, but in Japan and certainly in the Far East," says Molyneux. Bullfrog has more to lose from cartridge copying than many other games developers. *Populous* was one of the first games released on the best-selling Nintendo Super Famicom console and is also available on the Sega Megadrive and coming soon on the NEC PC Engine and Sega Master System. Console versions of *Powermonger* are also on their way and Bullfrog is currently writing a sequel to *Populous* (to be released later this year).

"Megadrive game prices are stupid, some of them are nearly £60. It's ridiculous. Half-megabyte EPROM's cost about £5 each if you buy them across the counter at your local electronics store. If you bought them in bulk the price would radically drop.

"They're relatively cheap. All you need is an EPROM burner which costs £100 and a method of downloading the original games code and data into an EPROM. This stage is usually handled by a PC micro with custom-designed software. The tricky bit is the circuit-board which is made especially to fit inside the console. It's not something that your backroom-boys would do, only if you're going to sell a couple of hundred copies.

He goes on: "It's like any piracy, you can't stop it. You need the computer to suck out the information, hold it, then shove it out again. You can use a special EPROM system that doesn't require a computer, but you lose out on the benefit of being able to alter the game and say, put a new name on the title screen or put more than one game on a cartridge."

The so-called compilation carts are all the rage in the underground circles according to 'Terry'. There is even one NES cartridge with a staggering 63 games on it! Now pirates are working on special Megadrive cartridges which have three games on them, with a switch on top to select which one you want to play.

Super Famicom is generally regarded as the most advanced games console available today and over 500,000 of them are sold every month in Japan alone. Now the Far Eastern pirates are cashing-in on the latest booming market.

Copies of popular Super Famicom games like *Super Mario World* and *F-Zero* have started to appear in places as diverse as Tokyo, Hong Kong, New York and London. So far it has been easy enough to spot these imposters – thanks to shabby stickers and strange mauve cases – but soon the pirates will perfect their deception skills and conquer this new challenge. Soon, you won't be able to tell the difference between the original and a copy. ■

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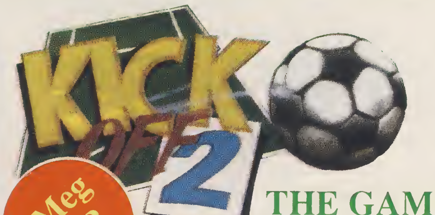

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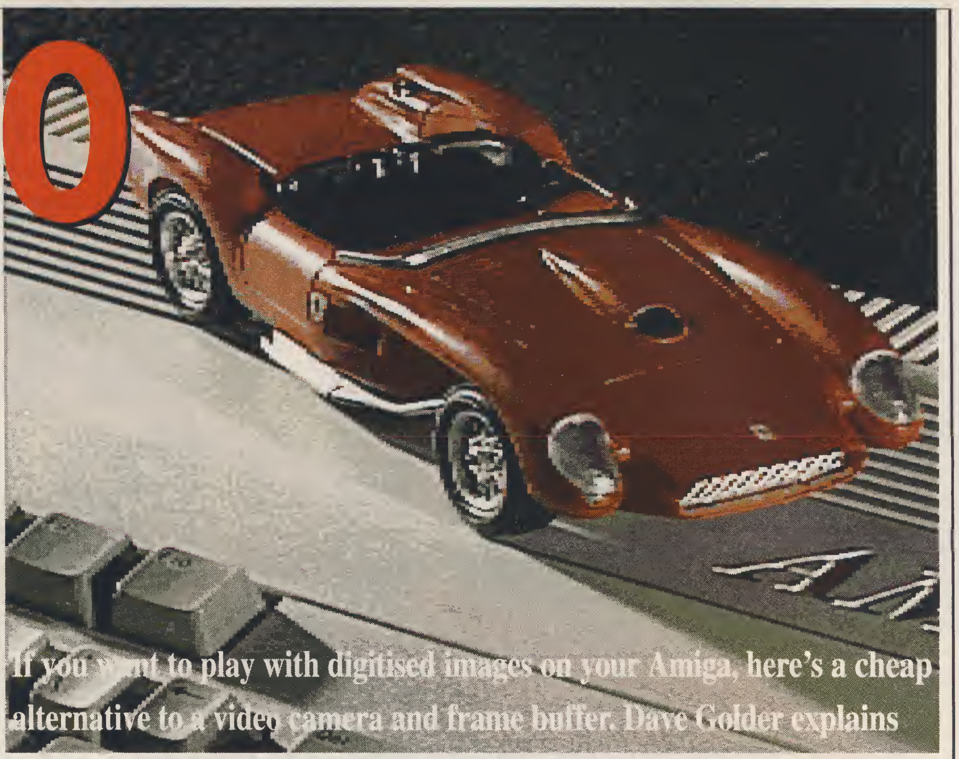
PHOTO PLAY



If you want to play with digitised images on your Amiga, here's a cheap alternative to a video camera and frame buffer. Dave Golder explains

Most budding computer artists are restricted to playing around with computer generated graphics because the technology needed to digitise images from the real world using a video camera remains out of the economic reach of most enthusiastic amateurs, and the results are rarely as sharp as you want. Nik Williams Broadcast believes it can provide the answer with its Pictureware computer picture library for the Amiga.

The library was launched this February with 24 sets of disks, each set comprising two disks of five pictures each. The pictures are available in two formats which will work with the vast majority of Amiga arts and graphic packages, such as *Digi Paint*, *Deluxe Paint* and *Photon*. The HAM (Hold And Modify) files offer over 4,000 colours while the the more commonly used IFF files maintain a very high picture quality with a somewhat reduced 32 colours.

Each set concentrates on a different subject and the range is impressively varied. Titles available at the moment include such diverse offerings as *African Famine*, *The Nudes,* and *Hippos*. And the library is set to continue expanding with the company aiming to make 2,000 pictures (400 disks) available by September.

BROADCAST QUALITY

The actual digitisation quality of the pictures is very impressive. This can be attributed to the fact that the camera used in the digitisation process is a £32,000 Sony Betacam which is used for recording broadcast television standard pictures. Indeed, Nik Williams Broadcast is an independent company involved in television production, and, according to co-proprietor Nik Williams, the library came about, 'almost by accident' when, just prior to Christmas, the company was working on a project for mainstream television for which they needed some digitised images.

'We had *DigiView*, but we couldn't get hold of any decent pictures,' explains Williams. So, basically, the company decided to digitise its own images. 'We assumed there was probably a lot of other people doing the same thing, but we investigated it, and there weren't.'

Williams now believes this is the first computer picture library available to users of desktop computers, which, for an idea which seems so obvious and so simple, is surprising. But the company has not settled for offering a half-baked service. The pictures themselves are the sharpest, steadiest and most colourful you could expect for the file formats and they are available at a very reasonable price. One disk will cost you £4.99 while orders of two or more will set you back just £4.50 each. That works out at less than £1 per picture.

Occasionally some of the pictures, especially dominated by various shades of the same colour, are slightly disappointing on the more limited IFF format, although this is the fault of the format itself rather than the process. Perhaps the library should not be over ambitious in its choice of subjects.

PD CATALOGUE

There are currently two catalogue disks available for 90p in the public domain either from the company itself or from various PD libraries. They list the sets of Pictureware disks currently available (12 on each catalogue) as well as carrying miniature 'sample' versions of all the pictures available. The company plans to release a further catalogue each every month, with details of the 12 latest sets of disks. There are also Pictureware demonstration disks available in the Public Domain, also for 90p, though the quality of these and the catalogue disks – there is noticeable interlace flicker – belies the standard of the real McCoy, so don't be put off.

Williams sees the pictures in the library being used in a similar way as clip art, reckoning, 'they give you a super starting point if you are into computer art.' He suggests they could be used as background for titles, animation and games as well as the basis for creating interesting Hockney-esque artwork. He is also eager for the library to appeal to commercial users, citing DTP and DVP (Desktop Video Publishing) as possible areas where it could be employed.

Whether this latter objective is attained remains to be seen. While the appeal of the library to hobbyists and enthusiasts is obvious, I would have thought that professional users would have preferred to commission their own pictures or even invest in their own digitisation equipment, as this would give them the chance for a much wider and more exclusive range of pictures. The Pictureware library might have an impressive selection, but even with 2,000 pictures, if a company needs a picture of, say, a teapot, then the choice is going to be limited.

TOP SELLERS

According to Williams the top selling disks so far have been the *People*, *Cars* and *Children* categories so there will be further volumes of these among future releases. *The Nude* disk has, apparently, been very popular among arty types. The *Edwardian Photo* disk is very impressive, especially considering the fact that many of them have been digitised from decades-old pictures that were no larger than a cigarette packet.

There is a copyright on the disks, so while copying for private use is unlimited, if you want to use the pictures commercially there is a fee – although again this is not extortionate. It works out at £7.50 for the right to use the picture, regardless of whether it is in its original form or if you have played around with it and/or distorted it in any way, and between 10p and 1p on every copy, depending on how many you need. The pictures on the PD disks, of course, can be used the same as any other PD disk.

For further information, contact the library's general enquiries line on 0792 470503. The 24 hour credit card hotline for ordering is 0792 645946. The catalogue and demo disks are also available from the company and other public domain libraries.

PRE-FORMATTED FLOPPIES

In its search for the best pictures around, the library has amassed hundreds of pictures which have not ended up on the main disks. These have not been wasted, however. Pictureware has placed all these pictures on to specially pre-formatted floppy disks in a variety of formats from big RGB files to small brush files in both IFF and HAM formats and is selling them in packs of 10 for £9. There is nothing regulating what goes on to these disks, so if you order a set you could be getting anything. You might find some absolute gems which you can save, or, if not, you can simply delete them and use the floppies for your own work. ■

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154	Track Record 1 meg
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1179	Chess etc
1184	Mastermind etc

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941	Art of Virus Killing
659	Essential Utils 1
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312	Word Wright
337	Ultimate Utils
334	Le' Copiers
613	202 Utilities
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1064	Lettrix

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CONTENTS

MACINTOSH........................14
CPC........................15
AMIGA........................18
ARCHIMEDES........................20
C64........................24
SPECTRUM........................25
ST........................26
CIRCUIT CITY........................29
WHOLE WIRED WORLD........................28
TECH TIPS........................32
CENTREFOLD........................36
EXPRESS ON-LINE........................46
PROGRAMMING........................43
THE PD COLUMN........................44

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With your host Haydn – the man with the fivers to give away

■ Super service

One often hears criticism of dealers in the computer business, but my experiences with such people over the past few years have been excellent and I'd like to publicly thank a few people...

Silica Systems really deserve credit for their service. I bought an Atari STE from them which gave no audio output, so they replaced it at once. After a few months it would no longer format disks – they repaired it. Six months later, the same problem cropped up and Silica speedily repaired the machine – even though the guarantee had expired.

I was just unlucky with my STE. Nevertheless, at all times Silica's staff were extremely helpful and speedy in their response.

I have also purchased many disks for my STE from public domain libraries. I would like to single out Goodman Enterprises and the ST Club for excellent advice and service. For my Amstrad I used WACCI, who have also always given excellent advice and service.

Maybe I have been lucky, but I've bought many items from mail order houses over the years and always had good service – I wouldn't like to pick out any particular names, but I have used the ones with high-profile adverts in magazines such as *Express*, *Amstrad Action* and *ST Format*.

I'm not saying there are no 'sharks', but overall there seem to be a lot of companies in the computer sector that really make an effort.

Jan Drozd, Sittingbourne, Kent

■ Eyestrain?

I use a computer as part of my job every day and I am concerned about the effect that this might have on my eyesight. Can you tell me what equipment is available – like special glasses or screen filters that can prevent eye trouble – and which are the most effective? Perhaps this could be the subject of an article in a future issue?

B Richards, Dartford, Kent

The answer to your question is a bit beyond the scope of one of my replies Mr Richards – there's a host of products on the market which claim to reduce the bad effects of sitting in front of a computer monitor all day.

The first steps to take are as follows: get your eyes tested by an optician, and if necessary, get glasses; make sure that the lighting in your office doesn't make reading what's on screen difficult; take regular short breaks from the VDU; try and set up the computer so that you can glance up from the screen and look across the room or out of a window from time to time – thereby re-focussing your eyes; and try to sit at least three feet away from the monitor.

As to anti-glare screens and glasses and radiation-reducing devices – look out for an overview in a future issue. Andy S our illustrious Ed is trying to slot in a feature on the subject, so readers with advice to offer or interesting experiences should drop me a line.

H F-W

■ Square eyes

Here are some more 'Seen on Screen' machines:

A while ago, *The Money Programme* had a report from America about IBM and visited a business computer centre where there were lots of computers (surprise surprise!). These included a Commodore Amiga 2000 (in its own separate display room), some Apple Macs, a Samsung PC and some IBMs.

There's the proliferation of computers that seem to adorn the desks of all the newsrooms these days. And another place to spot computers is *Grange Hill*, where they've only recently had one installed.

Talking of childrens' programmes, on *Sesame Street* I recently spotted an old-style Commodore 64 which supposedly wasn't working – no surprising really, as the power lead wasn't connected. Super Grover came to the rescue – well, he hopped around on one leg for a bit, anyway. The problem was soon fixed by switching it on from the back (!) and a strange picture appeared on the screen of a blue blob on a black background, which I think was meant to be a spider.

Finally, I spotted a computer in the Scottish Power/Hydro Electric TV advert, along with what looked like an *Outrun* clone. But readers living in England may not have seen this advert...

Scott Kier, Moray, Scotland

Well, for all that assiduous TV-watching I'm going to award you a fiver Scott. A very good multi-mention 'Seen on Screen' missive my man...

H F-W

■ The joy of BASIC

I suppose it was inevitable that an Amigaphile would write to defend the indefensible. My letter in *Express* 121 was basically a comparison with 8-bit machines. The BBC B's nearest equivalent to Workbench – AMX Desk – takes just ten seconds to reload from disk and less than ten seconds to display the set of icons for the disk I tried, which had 24 files. And without me having to buy an extra book to customise it!

As for the BASIC, why should it be necessary for buyers to spend money on a different one? Obviously most do not, and will be put off the genuine joys of programming for life. It's hardly a defence to say that previous Commodore and Atari BASICs were also awful!

And I thought the whole purpose of high-level languages was to distance the user from the hardware and operating system details. The fact remains that 'real life' graphics are always measured Y positive upwards, and a language for beginners – which is what the 'B' in BASIC stands for – should do the same.

As far as I am concerned, the operating system is part of the computer, and should not require 90 seconds of reloading just because a program calls a file that is not present. And the flickering mess and blank screens come on genuine, unpirated games – including those supplied by Commodore. As I said – indefensible.

John Goldsmith, Bury St Edmunds

I get the feeling that this debate could run and run, if I were foolish enough to allow it. But I'm not, so let's have an end to this particular strand.

H F-W

■ Old and active

I'd just like to let you know (with reference to the letters in *Express* 116) that I started computing with a ZX81, progressed to a Commodore 64 and now use a C128D. My main interest is typing in programs from magazines and then checking them for errors with my wife – we are both senior citizens, and have two sons and two grandsons who are so keen on computing that we have to keep up to date!

I type in listings with Easy Script and then print out on a 8023P printer which is loaded through an Interpod.

I love seeing youngsters' faces when I start talking to them – they must think 'what does an old man of 79 know about computing?'

J Clewlow, Tipton, West Mids

Good for you Mr C! Well, that's about an end to this week's letters page. I'm off to Scotland for the Bank Holiday – hence the single page this week. (I'm driving up in the diesel Fiat Uno, so I'm leaving early for once. Normal service will be resumed next week.).

H F-W

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NEW FONT FORMAT

As promised last time, here is a brief run-down of Adobe's new font format, which was officially announced at the Macworld Expo a couple of weeks ago.

The technology is not so much a new font format, more of an extension to existing Type 1 fonts. It will, claims Adobe chairman John Warnock, provide, "a new range of dynamic capabilities type users have never had before."

So far, font users have been limited to altering the size of a typeface, or using a program such as Quark *XPress* or *PageMaker* to condense or expand the font. Type has been limited to whatever weights the vendor supplies, and similarly with type style – there is only, for example, one italic version of the font available.

Adobe's new technology, called multiple master fonts, is set to change all this. With multiple masters, the user will be able to generate a virtually infinite number of variations on a single PostScript font. The user will have control over four different areas: the weight, or 'boldness'; the amount of contraction and expansion; the size; and the style – including such things as the 'italicness' and 'serifness' of the font.

Font designers will have to create at least two masters for each of the four controlable aspects of the font – for example, they'll have to produce a very light and a very bold version, a very condensed and a very expanded version, and so on. Then, the user can pick any point in between those two endpoints, and the software will mathematically generate the correct version of the font.

To visualise the whole thing, think of it as a multi-dimensional array, with an infinite number of elements. Or alternatively, as a square, a cube or a hypercube, depending on the number of controls the user has. Or don't try to visualise it at all. (Probably the best bet.)

The first multiple master fonts should be available in the next few weeks, and are expected to cost about the same as current Type 1 PostScript fonts. Oh, and you'll need *Adobe Type Manager* (ATM to its friends) and a special INIT supplied by Adobe to make them work.

RUMOURS...

Did you know that *The European*, Maxwell's continental organ, is totally produced on Macs? It uses Macs for page design, Macs for the illustrations, Macs for creating display ads and Macs for keeping track of the vast piles of unsold copies in newsagents throughout the continent (see *Eyes* passim).

If you have an LC or a IIsi and are fed up with the fact that you can't run programs like earlier versions of *Excel* and *Studio/8* because the program says that you don't have a maths coprocessor installed, help may be at hand in the form of a new shareware INIT called *SoftwareFPU*, by John Neil. This $10 utility fools the Mac into believing that the coprocessor is installed, so that many more programs will work on it. You'll find it (surprise, surprise) on CIX and from many other shareware distributors.

Apple has cut the prices of the Mac IIci and IIfx. The IIci 5/40 drops £200 to £3,695, while the IIfx 4/80 comes down £595 to £5,695 (excluding VAT). So far there has been no information about the SE/30 in the UK, although in the States the price is dropping by $1,000 for the 1/40 model and by $1,700 for the 4/80. Apple has also officially removed the Mac IIx and IIcx from its price lists this week, although again nothing has been heard in the UK – expect an announcement soon.

Apple's court case against Microsoft and Hewlett-Packard in the USA is coming closer to trial, after a federal judge rejected two major

POSTCARD FROM AMERICA

Apple pulled the cover off of its two new printers the other day, the StyleWriter, and the Personal LaserWriter LS. The LS is a snoozer (OK, it's very nice and all that, but you're not going to e-mail your mother), while the StyleWriter is much better.

The StyleWriter is based on the Canon BJ-10e BubbleJet engine, well known outside the Mac world. It's 360dpi (dots per inch) resolution is 20 per cent higher than the normal laser printer. (When they jam, do they become bubble gummed?)

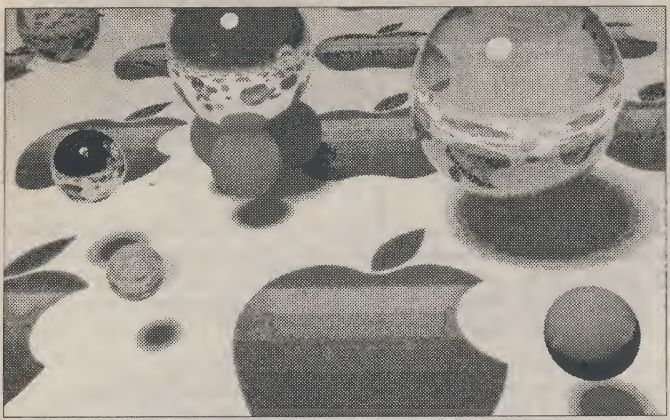
It is a wild looking printer, owing more to kitchen, or beauty appliances, than computer peripherals. I thought it was a small space heater, or a yogurt maker, when I first saw it. The pictures don't do it justice. Many of the new Apple products have curved surface design elements. The front of the StyleWriter is either a wide mouth and lips, or six months pregnant.

A TrueType INIT comes with package, allowing users running 6.07 System software to run the outline font technology that Apple and Microsoft have been working on. TrueType was supposed to come out with System 7.0. Since it makes the new brainless printers look great, and it's been ready to go for months, they pushed it out the door early. Apple technical specs say that these fonts can be used on a 1Mb Mac. It can run, but not without an occasional run-in with your applications.

It's painfully slow in printing – by design! InkJet printers spray ink on the page, which must dry before the page can be handled. Some printers drop the page into a holder while they're still a little "wet." Users can smear the ink if they're too eager to see their words in black and white. Apple engineers slowed printing time down to a couple of minutes to allow a page to dry before falling out of the front.

What I wonder about are the StyleWriter's operational temperatures, 15C and 30C. A laser engine works between 10C and 32C. Does the ink start to coagulate at 15C? Perhaps we'll have to buy hot printer bottles to keep the bubbles bubbling through the cold winter nights.

David Morgenstern



• Although Diamond wouldn't co-operate with my screen-grabbing software, this background shot should give you some idea of the quality of the game's graphics.

defence arguments. The case goes back to 1988, when Apple filed a suit claiming that Windows 2.03 and H-P's *New Wave* violated Apple's copyrights. How on earth Apple and Microsoft are able to collaborate on TrueType on the one hand, while fighting each other in court on the other, is beyond me. Still, all's fair in love, war and the fight against PostScript.

Aldus' cheap (£200-ish) page layout program *Personal Press* still hasn't appeared for review. The company's habit of running ads saying that things are "now shipping" when, in fact, they are only shipping in the States, is reportedly beginning to get on the nerves of some potential purchasers, who are looking to other suppliers or grey importers to provide them with the goods...

DIAMOND GEEZER

The latest shareware goody to hit the Macs here on the Rebel Alliance floors at Future Towers is a whizzy game called *Diamond*. It costs $20, and is like a supercharged version of *Breakout* (remember that?). But there are enough new twists in *Diamond* to make it highly addictive – lunch hour resounds to boings, squeaks and sampled *Ferris Bueller* soundtrack. Available from CIX, and all the usual blah blah blah, if you only get one game for your Mac, get *Diamond*. Oh, and it won't work on an LC with a 12-inch monitor.

Ian Wrigley

PC

SUPER MONACO GRAND PRIX

What a coincidence – the Formula One Grand Prix season has just started, and US Gold's *Super Monaco Grand Prix* appears on the Amstrad!

So far, the only version of this racing game I've played is on the Sega Megadrive. Needless to say, there's not much comparison. But it did leave me hoping for a fast, smooth, exciting GP game...

US Gold has gone for 16-colour mode in its conversion to the CPC. Is this wise, we ask ourselves? It certainly gives the Amstrad graphics a lot to do. First impressions of *Super Monaco* are of a colourful, but blocky game. The sense of speed is good, but the screen update is a bit jerky. It's the sort of game that cannot really be done justice on the CPC.

But first... the plot. Well, there isn't one really, in as much as Grand Prix racing is more or less about jumping in a car and going as fast as you can. There are 16 races all over the world to compete in, and to make it to each one you have to have done well enough in the one before.

You start off driving a qualifying lap. Here you have the track to yourself, and you simply have do one circuit in the quickest possible time. This governs your grid position for the race itself, which is pretty crucial because on each lap of the race (the total number of laps, plus the one you're on is displayed on-screen) you're given a target position. If you're running at or above this position, you keep racing. If not, it's game over. Needless to say, as the race goes on, the limits become increasingly tougher.

It acts just like the timed stages in *Super Hang On*, only with a bit more imagination. Also, it seems to work 'intelligently'. I've been doing really badly sometimes, and the computer has set me a pretty easy target. Yet on the same circuit I've been running around third or fourth and been given a target of eighth or above pretty early on. Of course, in the heat of the action, you've rarely got time to study the instruments...

Despite the fact that the hardware is struggling Super *Monaco Grand Prix* really is exciting. Once you become used to the blocky graphics and juddery updates, you start experiencing a sense of speed and a feel for the game. And when you look more closely there are plenty of impressive features. The backgrounds are different for each circuit, the tracks have hills and dips (and Monaco itself has its famous tunnel), the other cars are well drawn and you have a big fat mirror at the top of the screen to see just what they're up to (always assuming you're in front).

Considering what's been done, *Super Monaco Grand Prix*'s graphics are very good indeed. Sound is good too, with an upbeat title tune and realistic engine sounds. I'm not quite so sure about the squealing tyres on the corners, but there we are.

And the game is very well-judged in

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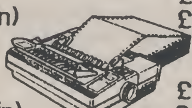

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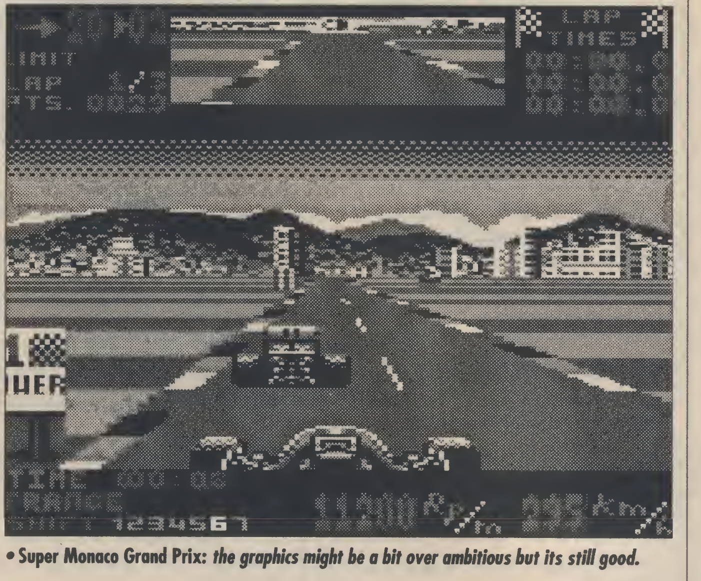


• **Super Monaco Grand Prix:** ***the graphics might be a bit over ambitious but its still good.***

terms of difficulty, too. You'd have to be a complete clot not to get round a lap or two the first time you play, but it's going to take a long time (and a lot of circuit knowledge) to progress more than a couple of races into a season.

US Gold is heavily into arcade conversions, and with arcade hardware becoming ever more powerful, it's not surprising that the Amstrad struggles (*Line of Fire* was awful). And do we want all these coin-op licences anyway? Well, we do want *Super Monaco Grand Prix*. It's graphically ambitious – almost too ambitious – but US Gold has pulled it off. It's a very, very good game.

DTP ON THE 464

Last week I was going on about desktop publishing and the demise of Database's *Stop Press* (remaining stocks have been sold off to the trade). Well, 464 owners will be familiar with those "I can't get no software" blues anyway, because that machine has never been taken seriously by, er, serious publishers, especially in the DTP field.

All that could change, though, thanks to Bit-7 Computer Software in Kettering. *Page Setter 64* is a program supplied both on tape and disk, and will work on an unexpanded 64K machine.

It consists of three basic modules – a text editor, graphics editor and page layout section. You load all three separately. The text editor's a bit basic, and the manual won't win any prizes for clarity. But you do get a choice of fonts. And when you come to design your page you can insert graphics, flow text around them and basically do just about all of the things you could with a package costing much more. Output quality is excellent.

Best news of all is the price – just £10 on tape or disk. The address to write to is: Bit-7 Computer Software, 221 Rockingham Road, Kettering, Northants NN16 9JB.

DINAMIC IN A FLAP

Remember that golden oldie *Phoenix*? Spanish software house Dinamic certainly does. Indeed, it's producing an new, up-to-date version called (wait for it) *Mega Phoenix* .

I have no details on the gameplay at the moment (what gameplay?), but I do have in front of me a screenshot, which seems to consist almost entirely of molten, leaden death, swarming enemy vessels and a ship the size of the Ark Royal (remember that?). More news when I get it.

CHEATS CORNER

Just space for a couple of keypress cheats... in *Hong Kong Phooey*, to get infinite energy, call up the options table and hold down the keys T, H, U, G, I simultaneously. And for infinite lives in *Blazing Thunder*, hold down the keys S, L, I, M, E on the options table.

Both cheats are from Stephen Troup of Kings Lynn. Well done Stephen!

Rod Lawton

Amiga

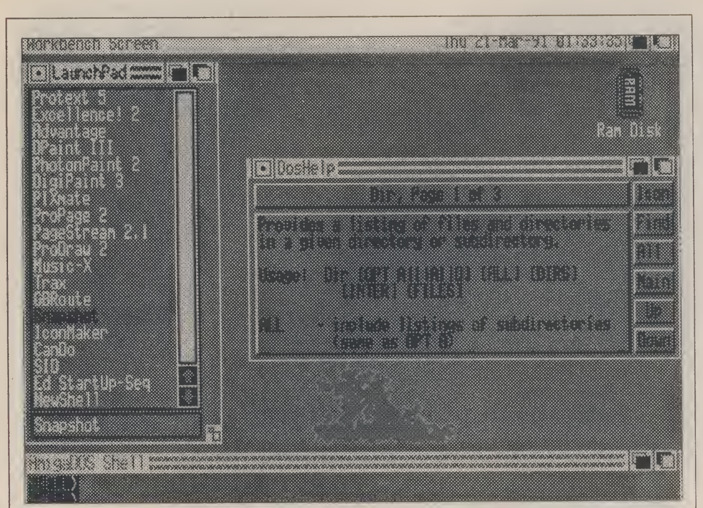
HYPERHELPERS BLASTOFF!

As reported in *Express* a few weeks back, Checkmate Digital has taken on the distribution of INOVAtronics' range of Amiga productivity software. Thanks to Steve Jones at Checkmate, I've been playing around with a couple of the company's products, mainly *HyperHelpers* and *CanDo*.

I'll be covering both these products in depth in a future issue of *Express*, but I must just mention one aspect of the *HyperHelpers* package which I have found particularly useful.

As reported, *HyperHelpers* isn't just a single program, it's a collection of useful utilities to enhance the usability of the Amiga. The one that I've found particularly useful is *LaunchPad*, a handy menu-like program that is an absolute must for anyone who owns a hard disk.

LaunchPad allows you to build up a menu containing frequently used programs on your hard disk. This menu, which sits in a small window on your workbench screen, allows you to load any program on to your hard disk with a



Provides a listing of files and directories in a given directory or subdirectory.

Usage: Dir [OPT A|I|AI|D] [ALL] [DIRS] [INTER] [FILES]

ALL - include listings of subdirectories (same as OPT A)

• *HyperHelpers: makes the Amiga a far friendlier machine to work with.*

double click of your mouse button instead of searching through the directory structure of your hard disk to find the program's icon.

OK, it doesn't sound like a particularly earth-shattering program, but what's great about *LaunchPad* is that when invoked from your StartUp-Sequence, you can have immediate access to any program without having to click on a single icon. You can even run CLI commands from the workbench, which is really useful.

I now have *LaunchPad* installed permanently on my hard disk; as soon as my machine boots, I can load *Excellence! 2.0* (which I use to write all my copy), *DPaint 3*, *GBRoute*, *ProPage 2.0* or just about anything else simply by clicking on its name in the LaunchPad menu.

HyperHelpers will retail for £50. Expect a full review soon, but in the meantime you can find out more by phoning Checkmate on 071 923 0658.

TFMX UPGRADED

Digital Distribution International (0753 686000) has released further details of its soon to be released music creation system, TFMX II.

Programmed by German software publisher Demonware, the new program boasts many new features to further enhance what is generally regarded as one of the best Amiga sound chip composers available. Here's what it has to offer:

MIDI support – The new editor is now fully MIDI compatible. With the right interface connected to your Amiga, you can now enter performance data directly from your MIDI keyboard. External MIDI synchronisation allows an Amiga running TFMX to be used as a dedicated sound module.

Pattern editor – The previous release of TFMX was criticised for being rather difficult to use, but Demonware has corrected this with the inclusion of an all-new Pattern editor which adds graphical sequence editing to the system. Unlike most programs of the type, TFMX has an editor based on a conventional score display.

Sound Synthesis – Samples eat memory, lots of memory, which is why Demonware has built in a new Sound Synthesis module that allows you to create sounds using Paula's internal registers. These have the advantage of using substantially less memory than conventional samples, while having a trendy 'acid-like' analogue feel to them.

Sampler – Now you can grab and edit samples from directly within TFMX using its built-in sample editor. TFMX provides direct support for any sampler that connects to the Amiga's parallel port.

Tool editor – Details are a little sketchy about this one, but it seems that TFMX II will allow you to create your own editing tools using a tool editor utility. That's all I can tell you.

Other features – Full search and replace (within a music editor?), a PAL-size screen, more macro commands plus much more besides.

MED GOES COMMERCIAL

On the subject of music software, fans of the much acclaimed PD music composer *MED* will be pleased to learn that not only is there a new version available (review next week), but *MED* programmer Teijo Kinnunen has announced the impending commercial release of his composition system.

According to Teijo, the new program looks all set to give heavyweight music packages like *Music-X* a run for their money.

The new program has one major feature, which has a name that virtually explains itself; put simply, *OctoMed* will allow you to compose tunes on your Amiga using a maximum of eight different samples simultaneously. OK, *Oktalyser* has beaten *OctoMed* to it, but *OctoMed* apparently achieves this impressive feat without loss of sound quality (something that *Oktalyser* most certainly doesn't do).

Other new features include powerful *Music-X*-like sequence editing, using a sort of 'semi-stave' approach. At the time of going to press, this was all that was known about *OctoMed*, but I'll pass on more details as soon as they become available.

The program should be available in about two months, priced at about £50-£75. For further information, contact the exclusive UK distributor AmigaNuts United on 0703 785680.

MORE FLIPPIN' MUSIC...

Crikey! The Amiga music scene seems to be a hive of activity this week! Not only have *TFMX* and *MED* been upgraded, but there's even news surrounding MicroIllusions' Amiga industry standard MIDI sequencer system, *Music-X*.

Unfortunately, the news is far from being good. According to a source close to *Music-X* programmer David Joiner, *Music-X 2.0* has been put on ice 'indefinitely' while Joiner works on a range of projects for Commodore's

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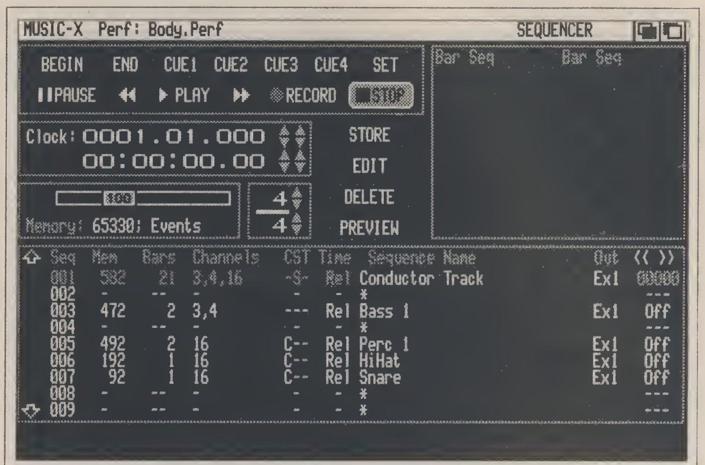


```
Clock: 0001.01.000
       00:00:00.00
Memory: 65330; Events     4/4

Seq Mem  Bars Channels  CST Time Sequence Name    Out  << >>
001 582   21  3,4,16    -S-  Rel Conductor Track  Ex1  00000
002  -    --  -          -    -  *                     ---
003 472    2  3,4       ---  Rel Bass 1           Ex1  Off
004  -    --  -          -    -  *                     ---
005 492    2  16        C--  Rel Perc 1           Ex1  Off
006 192    1  16        C--  Rel HiHat            Ex1  Off
007  92    1  16        C--  Rel Snare            Ex1  Off
008  -    --  -          -    -  *                     ---
009  -    --  -          -    -  *                     ---
```

• **Music-X:** ***Has version 2 finally bitten the dust?***

soon to be released CD-based Amiga machine, the CDTV.

The news isn't all bad for *Music-X* owners, however. Microlllusions has announced the development of several add-on modules which will extend the power of its acclaimed sequencing system. They are as follows:

Deflam – How many times have you recorded a complex sequence into *Music-X* live, only to find loads of extra notes that you accidentally touched as your hands zipped around the keyboard? With the new Deflam module, any notes shorter than a specified length can be automatically removed.

Scatter – Does your music sound rigid and lacking real feeling? If so, then *Music-X*'s new Scatter tool is for you. Scatter attempts to inject 'feel' into your music (also called 'humanising') by adjusting certain aspects of note parameters (adding errors, basically!).

PrintEvent – Guess what this does! Yep, you've guessed it. PrintEvent allows you to get a printout of the sequence data displayed within the *Music-X* Event Editor (the one that displays your sequences as a list of numbers).

Music-X is also starting to attract interest from third party developers. Music specialist Monumental Music has announced that it is to release a number of *Music-X* compatible protocols for popular synths. These are very much 'still in development', but Monumental promises me that they will cover such synths as the Yamaha PSR range of home synths, the Casio Tonebank and CZ range, the Roland D-series LA synths, Kawaii,Korg M1, T3 and the Yamaha SY series.

Jason Holborn

Archimedes

FACING FACTS

First off this week, two new companies seem keen on raising the summit of the Archimedes outline font mountain: well-known Longman Logotron, which already includes a couple of outline typefaces in its wonderful *Revelation* painting package, and an Edinburgh-based newcomer Design Concept.

The 18 packages from Longman Logotron include Braille, Morse and Semaphore, all pictorial 'fonts' that might be of great use in schools – the Semaphore, for instance, is made up of pictures of cartoonish characters holding flags.

Other decorative faces available include a building bricks lookalike called Brix, and an LCD-type design called Digital. They can all be used with Longman Logotron's own *Pendown* junior wordprocessor, as well as any other RISCOS package that makes use of the font manager.

Design Concept has been advertising its wares for a couple of months now; there are a few typefaces complemented by a couple of small utility programs. The typefaces include Ainslie, an upright handwriting-style face, another LCD and Acropolis, a font which will undoubtedly be much beloved of Greek restaurateurs.

They aren't as carefully hinted as the Acorn or EFF faces, and so the screen representation in smaller sizes isn't as good as you might expect, but then at £2 each, who's complaining. They are fine when printed out. These are all the sorts of faces you wouldn't use too often, and they are better for decorative headlines than for screeds of text you actually have to read. But for some types of documents, like posters for example, they can be just the thing to add a little zing.

One important point is that faces like these, and many in the huge EFF catalogue, do not have any PostScript equivalents. That means that there is no sensible way to print them if you have a PostScript laser printer, nor can you send any work to a typesetter. Here's where dot-matrix printers, direct drives and LaserJets have the jump on Postscript – any typeface you can see on screen can be printed out. If you want PostScript, then you have to limit yourself strictly to a relatively small set of compatible faces.

Longman Logotron is on 0223 323656, Design Concept is at 30 South Oswald Road, Edinburgh EH9 2HG, and the Electronic Font Foundry catalogue can be ordered free by telephoning 0344 872923.

DESIGNER SHADES

Among Design Concept's other offerings is *Shade*, a tiny utility that creates a Draw file consisting of lots of rectangles. Hmm. But the clever bit is that the rectangles are coloured, shading gradually between any two colours you select.

One use is for graduated tints in DTP files: select a frame, fire up *Shade*, select the start and end colour of the graduation, and drop the drawing onto the DTP frame. If you don't want the graduation vertical, group and rotate all the rectangles in *Draw* before putting them on the page. Simple and brilliant and just£1.50.

There's also *CountWord* for when you're using Edit and want to count how many words you have written, and all sorts of other stuff at prices only a little above what you'd pay for a blank disk.

NAUGHTY BOYS...

In an out of court settlement, Aleph One (purveyor of Arm 3 upgrades to the gentry) has received compensation from CJE Micros for unauthorised use of Aleph's software. As ever, the amount of damages remains 'undisclosed', though that's just what everyone really wants to know.

CJE admitted sending out lightly altered copies of the Aleph One Arm 3 cache control utility to people who bought CJE's competing Arm 3 upgrade. The author of the utility, Nick van Someren, has donated his money to charity. CJE is now writing its own replacement software, which will be sent to all the affected customers.

Rather more than slapped wrists, chaps. The Acorn market may be one in which most people are 'pals', and everyone knows everyone else. But this doesn't mean anybody can use anybody else's software. It's illegal and wrong.

A DATE FOR YOUR DIARY

This year's BBC Acorn User show, the top event of the year for Arc fans, will be in October, over the weekend of Friday 11 to Sunday 13. And it moves to its third venue in as many years; after Alexandra Palace and the Horticultural Hall, it's Wembley Conference Centre's turn to host the event. It's a bit like the Eurovision Song Contest, innit?

In fact, October could be a good date. As revealed in *Express* 122, Acorn's planned new portable Archimedes has been put off and looks like being launched in the autumn. By then, there could be something else to partner it. A marketing director of Acorn once said to me, and I quote, "In the computer business, you have to do something pretty spectacular once every four years."

This autumn marks the fourth anniversary of the launch of the first Archimedes, the 310. Don't say you weren't warned.

TYPING TECHNOLOGY

Iota is an unashamedly ambitious young company – it aims to become top dog in the Acorn software market within two years. Its first releases aren't yet to hand, but they will be a typing tutor and *Junior Database*.

Until pen-based computers become the norm, there will always be new people who need to learn to type. In the early 80s, you could wade thigh-deep in typing tutor programs for home micros, but more recently they seem to have fallen out of favour; perhaps today's 16- and 32-bit micros are too advanced for such a mundane job.

So Iota's new typing tutor software makes an attractive option. As well as starting by teaching you to type 'ASDF' and ';LKJ' as with any good typing course, it gives you on-screen prompts to stop you looking down at your fingers, and summaries showing where on the keyboard you make most mistakes. Iota is on 0223 421542 if you're still at the hunt-and-peck stage.

LAYING IT ON THE LINE

Acom looks like challenging Arcterm 7's short-lived reign as the sole RISCOS comms program that's fully multi-tasking and desktop-friendly.

On the 8-bit Beeb, Acom and Acom Host were Acorn's preferred viewdata systems, and original author W G M Roeling was also responsible for the Beebtel network viewdata system attached to many school Econets.

Recently announced by ECD Computers of Delft in Holland, the new Acom is primarily a Viewdata terminal for RISCOS, with a 32-number phone directory and downloading using CET or Xmodem protocols. But it also offers scrolling terminal emulation too (VT52, 100, 200, ANSI and so on).

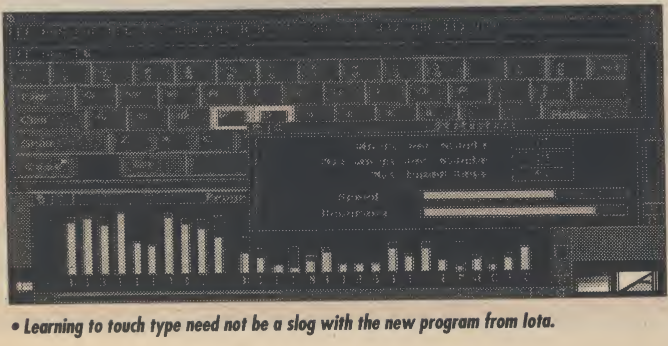
It lacks the scripting language of Arcterm but adds a better help system for new users and a full Viewdata editor for preparing Viewdata frames off-line. And ECD intends to offer upgrades to CEPT profile 2 (French Minitel) and to the much better resolution of profile 1 (German Bildschirmtext), in addition to the standard Prestel profile 3 graphics. Currently, you can only get the two better standards via Longman Logotron's non-multitasking and rather long in the tooth Arccomm software.

ECD is on 01031 15 147643.

COMING UP...

Over the next few weeks, I will be taking a look at a couple of newies from ace software house Fourth Dimension, and a bumper bundle of imaging news: *AIM 2*, a new framestore and Foster Findlay's *X Image*..

Ken Coumarin



• *Learning to touch type need not be a slog with the new program from Iota.*

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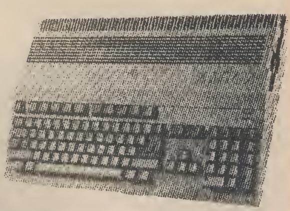

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FRACTALS

Fractals are complex patterns created using simple mathematical formulae. They look as if you need some heavy duty equipment and programs the length of *War and Peace* to bring them into being,but in fact, things need not be so complicated. The following program, sent in to me by Chris Wrad of Northampton shows how easy it is to create stunning graphics on your C64 like the ones below. The picture take quite a while to build up!

While the program is running press any key to stop the drawing, and press any key again to quit the program

```
10  DIM A(4), B(4), C(4),
D(4), E(4), F(4), P(4)
20  DATA 4
30  DATA 0,0,0,.16,0,0,.01
40  DATA .2,-.26,.23,.22,0,
1.6,.07
50  DATA -.15,.28,.26,.24,
0,.44,.07
60  DATA .85,.04,-.04,.85,0,
1.6,.85
70  READ M
80  PT=0
90  FOR J=1 TO M
100 READ
A(J),B(J),C(J),D(J),E(J),F(J)
,PK
110 PT=PT+PK
120 P(J)=PT
130 NEXT J
140 GOSUB 500
150 XSCALE=25
160 YSCALE=16
170 XOFFSET=140
180 YOFFSET=10
190 X=0
200 Y=0
220 PK=RND(1)
230 IF PK<=P(1) THEN K=1:GOTO
240
231 IF PK<=P(2) THEN K=2:GOTO
240
232 IF PK<=P(3) THEN K=3:GOTO
240
233 K=4
240 NX=A(K)*X+B(K)*Y+E(K)
250 NY=C(K)*X+D(K)*Y+F(K)
260 X=NX
270 Y=NY
280 IF N>10 THEN
XX=X*XSCALE+XOFFSET:YY=Y*YSCA
LE+YOFFSET:GOSUB 600
290 GET A$:IF A$<>"" THEN
GOTO 310
300 N=N+1:GOTO 220
310 GET A$: IF A$="" THEN
GOTO 310
320 POKE 53272!,20:POKE
53265!, 27:POKE
53280!,14:PRINT CHR$(147)
330 END
500 REM ** SET UP THE
GRAPHICS SCREEN **
510 POKE 53265!, PEEK(53265!)
OR 32
520 POKE 53272!, PEEK(53272!)
OR 8
530 BM=8192
540 FOR I=BM TO BM+7999:POKE
I,0: NEXT I
550 FOR I=1024 TO 2023:POKE
I,13: NEXT I
560 POKE 53280!,13
570 RETURN
600 REM ** PLOT A POINT ON
THE SCREEN **
610
BY=BM+320*INT(YY/8)+8*INT(XX/
8)+ (YY AND 7)
620 BT=7-(XX AND 7)
630 POKE BY,PEEK(BY) OR
(2<UP-ARROW>BT)
640 RETURN
```

Having run this main program you can change some of the lines to make new patterns such as a tree or a weird thing called a 'Sierpinski Triangle'.

- For the tree:

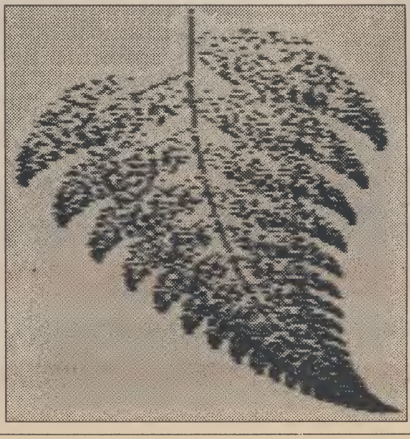
```
20  DATA 4
30  DATA 0,0,0,.50,0,0,.05
40  DATA .01,0,0,.10,0,.20,.15
50  DATA .42,-.42,.42,.42,0,
.20,.40
60  DATA .42,.42,-.42,.42,0,
.20,.40
150 XSCALE=370
160 YSCALE=265
170 XOFFSET=160
180 YOFFSET=50
280 IF N>10 THEN
XX=X*XSCALE+XOFFSET:YY=200-
(Y*YSCALE+YOFFSET):GOSUB 600
```

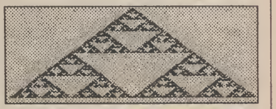
- For the triangle:

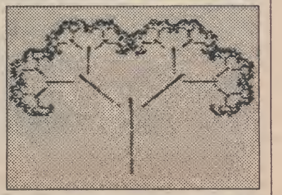
```
20  DATA 3
30  DATA .50,0,0,0.50,0,0,.33
40  DATA .50,0,0,.50,1,0,.33
50  DATA .50,0,0,.50,.50,.50,
.34
150 XSCALE=120
160 YSCALE=110
170 XOFFSET=50
180 YOFFSET=50
```

NEW NAME

Next week you have a new host taking you through the world of the C64, a talented young chap called Andrew Roberts who promises a few surprises. Be here for the start of a new area.







• The main program creates the fractal on the left. The top picture above is the triangle and the one on the bottom is the tree, both created by the sub-programs.

Spectrum

INDIE RAVE

Calling all mystic troll-bashing adventuring types. Here's a bumper bargain selection of stuff that should be right up your street, no matter which far away land, planet or other dimension it's located in.

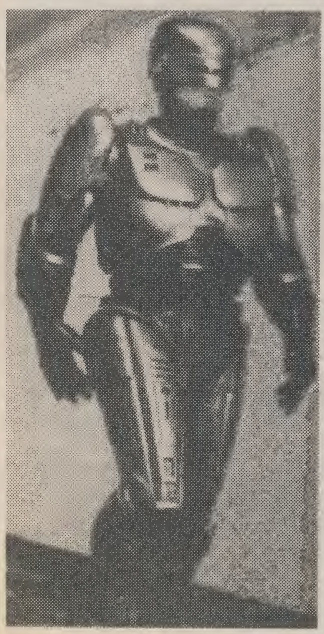
Zenobi Software, undoubted king of the Speccy adventure scene, has more adventures on offer than any sane person could play, let alone complete. Luckily most adventurers are completely hatstand and should therefore be interested in what the company has to offer. Foremost in the throbbing multitude available are the two volumes of mail order adventure compilations – *The Best of the Indies.* Both are endorsed by bearded guru and all round nice bloke Mike Gerrard, who's written the adventure section in *Your Sinclair* since the Messianic period.

The six games gathered on *The Best of the Indies Volume One* have all been raved about by Mike when originally released and with good reason too. Even stingy old me went mad about the first game to load, *Double Agent.* It represents something a bit different from the usual format of adventures with a neat line in schizophrenic gameplay.

The screen's divided into two halves, one for each of the secret agents. You switch control between them as you try to foil the usual dastardly aliens and recover a crystal. One of the agents under your control is strong but a bit thick; the other is decidedly weedy but intelligent. The devious author starts them in locations where the other's respective talents are needed to progress.

Double Agent is more of a puzzle-based game with no graphics or purple prose and it's sure to provoke severe brain strain in even the most battle hardened adventure experts.

Cloud 99 by Linda Wright is another game that had lots of nice things said about it on its original release. The plot provides a much needed break from the usual fantasy/sci fi stuff. Inspired by a dream, you are expected to investigate the slightly surreal goings on concerning Jack Frost and the weather city of Cloud 99. It's all a bit bizzare but beautifully presented and packed to the edges with yet more devious and downright difficult puzzles.


• *Learn how to make Robocop really invincible with our handy cheats for Robocop 2.*

The Labour of Hercules is next up and is a corking good legendary game featuring all your fave Greek mythological characters. The idea is to complete the 12 tasks of Hercules, as in the legend. Each task is excellently structured, seemingly impossible to complete at first but so obvious when you know how.

The next one, *Domes of Sha*, is set on somewhere called, in typical computer game style, OLAXAS, but don't let that put you off this spiffing and rather large text based quest.

The Secret of Little Hodcome is one of Zenobi's own adventures and fraying around the edges a bit when compared to the rest. It's well structured, though, as you try to rid the hamlet of Little Hodcome of an evil so unspeakable I can't speak about it. No doubt Jeremy Beadle must be involved in it somehow. Mike Gerrard describes it as a good introductory quest and I'd back that all the way.

Bringing up the rear is *Retarded Creatures and Caverns*, a top notch spoof of the original prototype mainframe adventure game. Starring Zenobi star *Bulbo*, a Hobbit-inspired character, it's full of more zaniness and wackiness than a whole month of kid's Saturday morning TV. The bearded one awarded it a Mega Game and he doesn't band those around without good reason. As with all Zenobi games it's well worth typing in any swear words you know...

Best of the Indies Volume One costs a paltry £3.99 and is recommended to any one of a remotely adventurous nature. Order from Zenobi Software, 26 Spotland Tops, Cutgate, Rochdale, Lancashire OL12 7NX.

ROBOHINTS

S Wells of Somerset has just very kindly heaved a huge batch of tips on my desk in the name of helping his fellow Spec-chums. So a round of applause, if you please, to welcome this comprehensive sorting out of *Robocop II*.

Good old S sent me the solutions for the two memory bank sub games after levels one and two. He tells me R=Right, L=left, U=Up, D=Down and F is for Fire.

Got that? Here then, is the solution for the first one:

Part One: 2U, 1R, 1D, 1R, 4D, 7L, 1U, 2L, 2U, 4R, 1U, 2R, 3U, 2L, 1D, 1L, 1U, 1L ,1D, 2L, 1U.

Part Two: 2D, 2R, 1U, 2R, 4U, 2L, 1D, 1L, 2D, 5L, 4D, 2R, 3FR, 3FL, 2FU, 2FD, 1U, 1R, 1U.

Part Three:1F, 1D, 3L, 3U, 2L, 2FR, 2FL, 3U, 1FR, 2FL, 3U, 1FR, 1FL, 3R, 1U, 1R, 2D, 2R, 4D, 2FU, 3R, 1D. **Part Four**: 1U, 1L, 1U, 1L, 2FD, 2L, 2U, 6R,

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1FD, 1R, 1D, 1R, 3D, 2L, 2LF, 3R, 3D, 4L, 2U, 3FR.

Providing I've typed it out correctly that should see you through. The second memory bank piece can be similarly dispensed with by following this set of instructions.

Part One: 1R, 3D, 1R, 1U, 1R, 1U, 1L, 2U, 1R, 3U, 3FL, 3FR, 3L, 2D, 2L, 1FR, 4FL, 3D.

Part Two: 1FR, 1L, 2D, 1FD, 3R, 1D, 1R, 5U, 1FR, 1U, 1L, 1U, 3FL, 3FR, 5L, 1D, 2L, 4D.

Part Three: 1FR, 3L, 1D, 2L, 2D, 1FU, 1FR, 1FL, 2R, 2FU, 2R, 2FR, 1U, 2R, 2FR, 1U, 2R, 1FU, 1D, 2R, 4U, 1L, 2U, 1R.

Part Four: 2L, 4U, 3FL, 3FR, 2L, 1D, 1L, 2D, 1R, 3D, 1R, 1U, 3R, 2D, 2R, 2FR, 5U, 2R, 4FD, 4FU, 1R, 2D, 1L.

And there's more *Robocop II* jiggery japery from S with the codes for the lifts which are on level three, apparently – LIFT ONE = 4, LIFT TWO = 14, LIFT THREE = 7, LIFT FOUR = 40, LIFT FIVE = 19, LIFT SIX = 8

You've now got absolutely no good excuses for not completing the whole thing. If you're still too pathetic to finish it I suggest forging a note from your Mum or feigning an old sporting injury. Thanks S!

SEND 'EM IN

Have you got any tips, pokes or cheats for Speccy or SAM games? Send everything you know to Robin Alway, *New Computer Express*, 30 Monmouth Street, Bath BA1 2AW.

Robin Alway

ST

WRITE ALL OVER YOUR ST

By now you will have heard about Atari's new wonder computer, the ST Pad. You know, the one that uses a stylus as opposed to a keyboard for inputting the information. Well, hot from the *Z-Net* on-line newsletter, I have some more information about this exciting machine's technical specification.

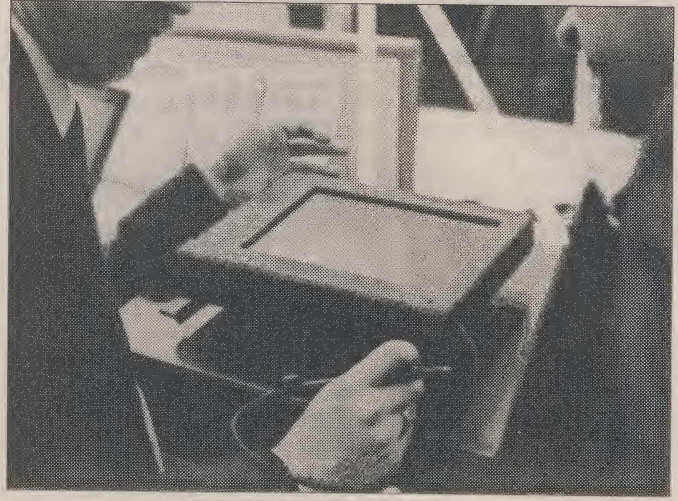
The ST Pad runs off the standard ST 68000 central processor, running at 8MHz. It has an A4 footprint and is 3.5cm thick. It will come in two memory configurations, 1MB and 4MB, both without a hard drive. In terms of interfacing, there's a MIDI port, an RS232 and a parallel interface, a DMA port and a Bus connector.

One of the options, will be a standard keyboard, which is compatible with Mega STs. It can run for up to 10 hours before needing a recharge, which is surprising when you consider that the batteries have to drive a 640/400 resolution LCD screen.

The unit can accept and understand a wide range of character types, including Japanese and cyrillic. What is more you can swap between writing text and drawing sketches quickly and simply. Once you have finished writing or sketching the computer will drop into a halt mode during which time it will notdraw power from the battery; it will then automatically start up again as soon as you pick up the stylus.

ST Pad comes with two silicon drive slots. These can be used for two purposes, either as extra RAM or to load in applications software. These can be up to 4MB in size, which means that programs of considerable size can be quickly and easily loaded.

There is no word as yet on release dates or possible prices. But if the unit does come in at under £600 it will be a major coup for Atari and a mould breaking machine.



• The ST Pad has the potential to be a groundbreaking machine.

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FIRST CALAMUS-AID

Admit it, *Calamus* is a hard program with which to get to grips. We all know that it's the most comprehensive DTP package available for the ST, but wading around in those icons is comparable to finding your way around the Gobi desert with only a piece of sandpaper as a map.*CalAssistant* is a memory resident help program for *Calamus*. It actually sits on top of *Calamus* as an accessory program, which means that you can refer to it at any point in the proceedings.

The program uses text, icons and pictures to explain each command and adds to these with hints and tips on getting the most out of that particular function. What's more each help section will refer you to the appropriate page in the *Calamus* manual.

Spar Systems, programmer of *CalAssistant*, tells me that the whole package runs in only 90K. However the company adds that it will only run in monochrome mode and you will need a hard drive if you want the software to run at anything approaching full speed.

CalAssistant is available from Spar Systems, 381 Autumn Avenue, Brooklyn, NY 11208, USA, telephone 0101 718 2353169. The recommended retail price is $34.95.

TITLED TV

If you have a video camera and an ST, then the thought has probably crossed your mind that you could combine the two. One of the most obvious applications for this kind of thing is creating title sequences for your own film making efforts.

TV Titles 2.0 is a program which enables you to create professional looking titles that can be dumped to video via a standard television lead. Used in conjunction with a genlock, you could overlay professional sub-titles or comments on images.

The actual titler program consists of a flexible mouse driven front end. Images or text, can be treated to a variety of effects and then run in a set sequence. More than one sequence can be held in memory at a time, making long titles possible.

The displayed text or image can be scrolled, spiralled, dissolved, faded, wiped, venetian wiped or shuttered. These effects can be cued precisely by means of the delay function. All the colours are fully definable and these can be "flashed" or colour cycled to produce animation effects.

When you're happy with the title sequence you can plug the video in and run the program. This kind of program is almost certainly of use to small video outfits as well as home users.

If it sounds like your kind of thing then telephone Caledonia PDL on 0463 225736 or write to 250 Oldtown Road, Hilton, Inverness, IV2 4PT. *TV Titles 2.0* costs £25 inclusive of postage and packaging.

GET YOUR BACKUP

Anyone who's used a hard drive for longer than two weeks, knows the one golden rule: always back it up.

You see, hard drives are irresponsible pieces of hardware, the sole purpose of which is to crash at the worst possible moment, like when you've just saved your memoirs to disk.

Previously the best backup utility around was a nifty progette by the name of *Turtle*, which was icon driven and very flexible. A brand new backup program has been brought to my attention and it goes by the (rather stupid if you ask me) name of *The Good Backup Utility (GBU)*.

The *GBU* maintains a shadow of your hard drive, either on another partition or on a series of floppy disks. It sets itself apart from other back-up programs by using an incremental save feature. What this means is that you'll only have to save to floppy or hard drive programs which have been altered, added or deleted.

This intelligent saving means that it will be considerably quicker than other utilities which simply bung the whole hard drive down on 40 or so disks. In effect, this means that the more often you backup, the less time it takes.

GBU is interruptable. This means that you can hit the space bar and stop it saving. Then when you have a bit more time, the program will remember where you have saved up to and carry on from that point.

The program works on all versions of TOS as well as all versions of ST. The programs costs a mere $29.95 and is available from "The Computer Bug" in Hadley, MA, USA. Telephone the company on 0101 412 584 7722.

Andy Hutchinson

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WHOLE WIRED WORLD

A new PC emulator for the Amiga enters beta testing phase, Tandy slashes PC prices and launches a budget CD drive, while Apple sets up a new Mac factory...

BUDGET EMULATOR FOR AMIGA

Most Amiga users will be aware of *Transformer*, a PC emulator for their machines. Trouble is, *Transformer* only runs properly on a 68000-based Amiga, so users of 68020 and 68030-based machines can experience more than their fair share of problems – as if they haven't enough running DOS!

Mark Tomlinson of Christchurch in New Zealand has got round this problem by developing a PC emulator specifically for the 68020 and 68030-based Amigas. And the great thing is, he's only asking US$30 for the program.

To promote the package, Tomlinson is distributing a demo version to the online networks, such as Compuserve and Genie. The demo has two limitations: just one floppy disk drive is supported, and only 2Mb of hard disk space can be used.

According to Tomlinson, his program is still in its beta test stage, so bug reports are welcomed. The final version will be shipped free to all beta testers.

To run *IBM B*, as the package is called, Amigans will need a 68020 or better-equipped Amiga fitted with at least 2Mb of fast RAM – the package won't run on a 68000-based Amiga. The reason for gobbling so much memory, Tomlinson says, is that the emulator allocates 1Mb of memory to the PC's virtual address space. A maths co-processor is not required, but later versions of the *IBM B B* emulator may use one to emulate an 8087.

For further information contact: Mark Tomlinson, 30 Kirner St Christchurch, New Zealand.

Email via Usenet – tomlinson@elec.canterbury.ac.nz

VIDEO
NEWTEK
TOASTER

• Video Toaster: new dawn for the Amiga?

AMIGA EXPO IN NEW YORK

While Cebit-goers were tramping home from Cebit in Hannover in late March, New York City played host to Amigaworld Expo. The show, which spanned three days, brought a host of Amiga goodies to the fore, not the least of which was Newtek's *Video Toaster*, which got its first major hands-on airing to the public.

Newtek managed to rally staff from ASDG and GVP (two Amiga mainstay companies) together for its press launch of the *Toaster*. Mark Randall of Newtek discussed how Apple developed the Macintosh platform as a revolutionary machine that would bring high end graphics power into the homes of many.

After initial success , sales of the Mac dropped abruptly after only six months on the market. Everyone thought this would be the end of the machine, according to Randall. Then the Laserwriter was introduced, and the Mac found its niche in the DTP market, and the rest is, as they say, history.

Randall then said that the *Video Toaster* is to the Amiga what the Laserwriter was to the Mac – it is the tool that will bring the Amiga to the forefront of the desktop video marketplace and take the Amiga out of the doldrums. He said that many people have approached Newtek saying 'Wow – what a breakthrough – too bad you picked the wrong machine to create this thing for – if only you had done this for the IBM or Mac...'

Randall claimed that the reality is that the Amiga is the only machine Newtek could have chosen for the job, because it is the only true video machine. The *Toaster* would not have been possible on any other platform.

GVP staff told show-goers about their role in the *Toaster*'s future by explaining the importance of its accelerators to achieving the maximum power that the *Toaster* is capable of.

GVP's 33 and 50 MHz accelerators for the Amiga are great time-savers when it comes to rendering with *Lightwave*, the three-dimensional modelling package bundled with the *Toaster*, and are a boon for the quick loading of stored graphics images

Elsewhere at the show, Mast Technologies was demonstrating its *Colourburst* 24-bit video board for the Amiga that is expected to sell for under $600 – not bad for a true 24-bit colour card that offers stunning images.

Among several other interesting new products on show were: ICD's *Novia 20i* internal 20 MB Hard Drive for the A500 Amiga; Sunrize Industries' *AD1012* and *AD1016* digital audio cards which can handle 12-bit and 16-bit sound respectively, with up to 100,000 samples per second – availability of hard disk storage space is the only limitation on sample length; Softlogik's *Art Expressions* structured drawing package; GVP's *Scala* presentation package, and Oxxi/Aegis' *Presentation Master* – a much-needed object-oriented business presentation tool for the Amiga, which is similar in capability to Aldus *Persuasion* on the Mac

USA AMIGA PRICES SLASHED

And now for some good news – Commodore US has shaved pricing on the Amiga 2000 and 3000 series by between 10 and 26 per cent in a bid to make the machines more price competitive. The A2000 drops 16 per cent – down to $1,599 – while the A2000HD falls by a full 26 per cent down to $1,999. The A3000 Model 16/50 falls the least – by 10 per cent to $2,999, while the Model 25/50 has been shaved 12 per cent – down to $3,499.

TANDY'S $199 DOS COMPUTER

In a US bargain-bin sale, Tandy has cut pricing on its 1000HX PC to just $199 – the machine is a complete PC in an Amiga A500-style casing, complete with DOS in ROM, a floppy drive and built-in *Personal Deskmate 2* software. The only thing missing from the package is a monitor, which Tandy will sell you for as little as $60.

Tandy UK is still charging around 300 pound notes for the machine. But if it's being phased out in the US, it's a fair bet that it's not long for UK consumption either. Watch this space.

As if a $199 PC wasn't enough, Tandy has also storm-trooped in with a sub-$400 CD-ROM drive. The CDR 1000 unit is supplied as a direct replacement for a disk drive on a PC and loads like an audio CD system, with disks slotting into a tray that rolls back into the main casing, just as on an audio unit.

No disk caddy is required, as with competing systems, so what's the catch? Well, the drive isn't the fastest on earth, not does it have a fast data transfer rate – 150K per second is the best it can manage. Still, the $399 price tag for the hardware includes an 8-bit interface card for the PC and driver software, as well as all the necessary connections.

HP AND LOTUS ALLIANCE FOR POCKET COMPUTER

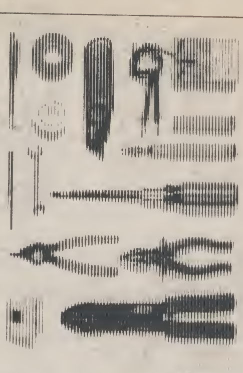
Reports from the US suggest that Lotus is working secretly with Hewlett Packard to develop the HP 95LX, a palmtop computer in the same vein as the Atari Portfolio. The unit will reportedly contain an appointment calendar, calculator and software to maintain a complete Filofax-style diary system. ROM cards are the order of the day for storage. The machine is being readied for a summer launch with a target price of $695.

MAC PRODUCTION UP BY 30%

A former Data General plant in Colorado Springs that has been on the market since 1989 has been purchased by Apple Computer in response to the increased demand for its new line of low-cost Macs. The 340,000 square feet facility becomes Apple's fourth plant and will require between 800 and 1,000 people to run.

Apple currently has production facilities in Freemont, California, Cork, Ireland and in Singapore,so why the expansion? According to Apple, the plant became necessary when, even after extending the Singapore and Cork plants to round-the-clock operations and airlifting Mac Classics in from Singapore on almost anything with wings, including planes from Aeroflot, the Russian airline, it proved impossible to satisfy the massive demand for Macintosh computers. ■

CIRCUIT CITY



Building a NICAM TV tuner/decoder sounds like a tall order, but fear not – Keith Pomfret and Michael Stirling put on their platform shoes and rise to the occasion.

When Circuit City recently found the Amstrad MP3 TV tuner alive and well in Shropshire, Scart monitors suddenly became TV sets and TV detector vans were seen buzzing around wherever there was a computer to be found.

It was a useful idea, and a pleasant reversal of the more normal use of a TV as a monitor. As the 90s progress all kinds of media are merging: computers are being used to control CDs, sound and vision are digitally encoded and genlocks are combining computer output with video and broadcast signals.

But while we're waiting for the broadcasting giants to decide on which wide screen TV standard they are going to throw the corporate weight behind, we've at least got NICAM stereo sound.

NEW SOUND FOR OLD

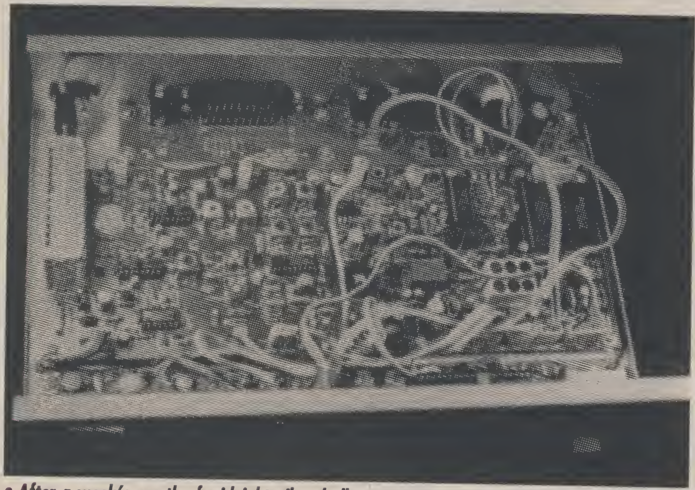
If your current TV doesn't have NICAM, you don't want to trash it for a new NICAM one, or if you've a Scart Computer monitor that you'd like to use as a second TV with digital sound, the Maplin NICAM Tuner system is probably ideal for you. It's a comprehensive kit that contains all of the parts to build a NICAM Stereo sound decoder, a TV tuner and multiple outputs.

It is possible to build the kit a module at a time to save cash but, if you can afford it, £139.95 will provideyou with a black box that takes the incoming TV signal, strips the encoded NICAM signal from it and can output that to Scart, Phono and DIN connections.

The video element is available as a modulated signal, a composite video signal or via the Scart output. An advantage of all these video and audio outputs is that the Maplin NICAM kit is widely compatible. But important to many builders is the tuner element replicating the tuner of a colour TV. The benefit here is that the Scart output can be used to feed a monitor that conforms to the Scart standard. Thus, the monitor on your Amiga, Arch, ST, or even CPC may display TV programs.

• The NICAM TV tuner/recorder. A black box that wouldn't look out of place beside your stereo, but which can turn your scart monitor into a TV – but don't forget your licence.

To make best use of the unit's ability to decode the NICAM signals, you'll need some sort of stereo or hi-fi. It's perfectly possible to feed the digital stereo signals into a Scart monitor with sound capability, but to appreciate digital spatial stereo a better system is called for.



• After a week's worth of midnight oil and elbow grease on a project rated 'fairly hard' the inside story - a well laid out, internal design.

The two uses that we put the NICAM decoder to were as a second TV via the Amiga, and as a way of using the expensive B&O hi-fi in the lounge to add surround-sound digital stereo to last year's almost new FST television. In the case of the Amiga, we tried connecting the NICAM decoder to a stereo Scart monitor and making the audio connections to the monitor. Sitting close to the screen as one would when working at the keyboard, the spatial effect of the digital sound was apparent but sitting further away for normal viewing, a different solution was called for. A pair of bookshelf speakers and a mini stereo amplifier from Trilogic were the answer and in a small room (3m x3m) the new TV Amiga with digital sound brought a new level of entertainment to the computer.

On a more serious computing level, the digital output meant that digital sampling could be taken straight from a broadcast signal without the hiss that normally accompanies TV broadcasts.

The only down side of that is that TV broadcasts carry copyright and you should get permission before sampling them in the same way that you'd get permission if you wanted to sample Madonna's latest offering.

The addition of a genlock to the system meant that it was possible to combine video, audio, text and picture files to produce an interactive database where all of the sources were either digital or digitally processed.

In the lounge we aimed for leisure. Here we wanted the current TV to be enhanced with NICAM digital sound. The four speaker Hi-Fi was attached to the decoder unit and the speakers re-positioned to make the screen the focal point of the room. Result, TV programs enhanced with digital sound and movies that make the cinema redundant.

The unit's enhancement of audio signals made

SHOPPING LIST

- NICAM kit from Maplin, price £139.95 – or call them on 0702 554161
- Other peripherals can be obtained from Trilogic on 0274 678062
- Expensive Hi Fi and TV from Bang &Olufsen, somewhere in Scandinavia
- Genlock from HB marketing on 0753 686000
- House containing small room originally acquired from Barratt Homes

THE BUILD UP

Michael spent a week of his spare time turning the heap of components into a fully functional NICAM tuner and decoder. This is what he found:

- The documentation could have been better; but with the help of the Maplin constructors magazine, I was able to complete the kit
- A little confusion was caused by the inclusion of resistors of both old and new colour codings but the constructors guide did explain the colour coding.
- During construction I worried about dull solder joints. When I switched from Ersin to Tandy solder the problem went away. The reason? Ersin solder is 60/40 per cent lead to tin; Tandy is 60/40 per cent tin to lead.
- General component quality is good. The PCBs are of high specification although C17 and C18 (display PCB) had holes too closely spaced for a good fit.
- I enjoyed building this kit and burned quite a lot of midnight oil to complete it in a week. Not for the beginner and full use of diagnostic tools and equipment was needed to test the various sections. As well as tools for construction, a digital multimeter, an analogue multimeter and an oscilloscope were used for diagnostic checking and tuning.
- Total time spent on the kit 25-35 hours including diagnostics Difficulty, fairly hard.

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With a view to expansion, ICE Software is looking to recruit experienced

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Contact: Martin Kane,
ICE Software, 244 Bath Street,
Glasgow, G2 4JW
Telephone: 041-332 9007
Fax: 041-332-8986

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Domark requires a CDTV programmer! One who is experienced in "C" and Assember and has experience in programming on the Amiga using the operating system.

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on 0932 821357, by telephone
or by fax on 0932 821358

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Call or write to Ian Mathias at Virgin Games for further details
16 Portland Road
London W11 4LA
071 727 8070

Development Teams and Programmers

The Sales Curve's fast growing software label **STORM** wants top quality Development Teams and in-house programmers to code its future releases.

The company that produced Silkworm, The Ninja Warriors, Saint Dragon and SWIV is seeking third party development teams, freelancers and in-house programmers to produce computer conversions of Big Run, Rod-Land and Double Dragon III, as well as original designs for various non-arcade licenses and console projects.

If you have a proven track record on Amiga, ST, C64, Spectrum, Amstrad, Nintendo or Sega, contact:

THE SALES CURVE LTD
Unit 17, 50 Lombard Road,
London SW11 3SU
Or phone the Development Manager,
Rob Henderson, on 071 585 3308

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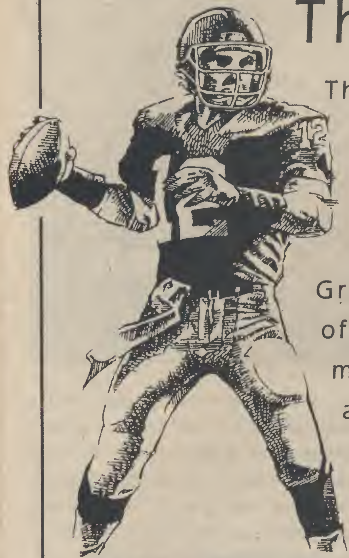

The creators of such trendsetting hits as **Wings, It Came from the Desert, Rocket Ranger** and the **TV Sports** range have opened a new video console development group in sunny Southern California (7 miles from Malibu). Join a hand picked team, which includes fellow British programmers Brian Howarth (Theme Park Mystery) and Andrew Green (Impossamole, Dangerous Dux), in developing the next generation of games for the Super Famicon and Sega Genesis. Qualified candidates must have proven game development experience in 6502 and/or 68000 assembly language. Prior console experience is a strong plus. A University degree is helpful but some college is mandatory. Compensation includes salary, benefits and royalties, and all relocation and U.S. immigration expenses will be paid. Interviews will be held in London on Saturday 13th April and Sunday 14th April. Interested candidates should respond immediately via post or fax to:

Bob Jacob, President, Acme Interactive Inc.
2660 Townsgate Rd, Suite 740,
West Lake Village, California, CA 91361
Tel: 0101 805 495 512 Fax: 0101 805 495 8048

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TECH TIPS

Struggling to learn a programming language? Need some help to get the best sounds from your ST? Got any tips? Send your stories and queries to Keith Pomfret, Tech Tips, New Computer Express, 30 Monmouth Street, Bath BA1 2BW.

■ HELP! BASIC database

I have struggled for a couple of years to write a database program for my PC. I learned computing on a BBC B which had the BASIC language on a ROM, so this is the language that I feel comfortable with.

I want the database to record the details of members of a computer club of which I am the secretary. The problem is that as I get the program to work, I dream up another utility that would make it better. I'm on Version 12 now and being realistic, the program is never going to get to the stage where it works 'properly'.

All of the bolt-on loops and routines bring with them a time overhead and it can take half a minute to dig out a record. I now realise that I have a couple of alternatives: I can either learn a new language or move on to using a commercial program.

I was against the idea of a new language but we're changing the computers where I work from PCs to a mini system and there are a couple of originals of *RapidFile* going free with original disks and documentation.

What I need you to tell me is, would *RapidFile* do the job for me and is there any way of speeding up my program without learning a new language?

John Fetter, Dulwich

If you want to take the easy way out, *RapidFile* will certainly do the job. It will run on any true XT or AT clone and offers features that will hold your name and address lists, mailing labels, checks, calculations, inventory, form letters, accounts and reports.

To help you even further, there's a spelling checker and a thesaurus. If there's an original going begging, grab it with both hands. *RapidFile* comes from Ashton Tate (the folks responsible for *dBase*) and will be worth its weight in gold to you.

If you want to speed up your own program, print it out and take a long look at it. BASIC programs become clumsy and cumbersome when you add bits as you need them. It may be that you've done the same sort of routine several times in the program. Perhaps you can combine several routines into one module – which should make the program more compact.

You didn't say which dialect of BASIC that you're using, or whether it is compiled or interpreted. If you are using an interpreted BASIC, get hold of a compilable BASIC, make the necessary dialect adjustments and your program should run a good deal faster once compiled to code instead of being interpreted an instruction at a time.

■ HELP! Amiga s-s-samples

I have an Amiga 500 with 1Mb and an extra drive. When I bought it (second hand) it came with a piece of software called *Audiomaster II* which is a sampler and player. There are a few demos on the disk and I am impressed enough to want to try sampling myself.

A friend has offered me the Trilogic Mk 2 stereo sampler and I want to know whether this will work with *Audiomaster*. I also want to know if I'm breaking the law taking samples from my CDs. My Dad says I am (he's a stiff) but my Mum says if I only do it for my own fun, no one will know and it doesn't matter.

Mike Brough, Coventry

The Trilogic Sampler will work with your *Audiomaster* software. Incidentally there should also be some sampling software with the sampler hardware. It's quite basic but it's good fun and an easy way to learn about sound manipulation.

There's also a new version of *Audiomaster* out - *Audiomaster III* is everything that its predecessor was and more besides. If you want to get hold of a copy of the latest version, give Silica Shop a ring on 081-309 1111.

To address your other question, sampling copyright material without permission from the copyright holder is theft. It's no different from any other theft. By sampling other people's work you potentially deprive them of the benefit (financial or otherwise) of their own work.

Having said that, I'm sure that everyone that has ever played with a sampler has fed something commercial into it if only to find out what Madonna sounds like backwards. The harm isn't done by the occasional giggle caused by manipulating a well known sound but by the danger that people will pass off other people's work as their own. The golden rule has to be: If in doubt, don't.

If you are going to sample sound, why not try to be original and look for new sounds instead of borrowing other people's. This isn't as difficult as it sounds. With a cheap (£20) microphone and a tape recorder, I went out to look for sounds and came back with some quite splendid noises. Perhaps the best was a slapping bass guitar sound that was made by plucking the alternator belt of a 38 tonne Foden truck with a tyre iron and then manipulating the frequency and content in a sampler. This may sound like an extreme example but it serves as proof that there are plenty of usable sounds out there without borrowing someone else's.

■ HELP! Flat ST

What are flatties in my ST? I was hoping to upgrade the RAM from 512K to 1024K but the shop I took it to said that it is a nearly impossible job because the memory is made up of flatties. I have searched the manual and can find no mention of this.

I've since found a company advertising in a magazine that will do a memory upgrade to any ST but before I send it off, I want to solve the flatties puzzle

Neil Beecham, Maidenhead

I think that the flatties that you refer to must be surface-mounted chips. These are attached directly to the circuit board instead of being attached by legs into sockets. As there are no sockets, your local dealer probably thought that the job would be too much hassle.

It shouldn't be too difficult though. There are several companies specialising in ST memory upgrades. One of the simplest routes is via a a circuit board that fits over the memory management unit in the ST and allows the memory to be upgraded to 1Mb.

If you are competent with a screwdriver and you don't mind waving bye-bye to any remaining warranty, you could always get the board from Third Coast Technologies and have a go at fixing it yourself. Only do this if you are confident of your abilities though. Don't risk a good computer to save a few quid. Third Coast is on 0257 426464.

■ HELP! PC gamer

What do I need to plug my joystick into a PC? I have an IBM XT clone and an Amiga and a couple of joysticks. Most of the Amiga games only use one joystick at a time so I may as well have the other one attached to the PC. The XT has no joystick socket but most of the PC software can use a joystick so how do I plug one in?

Ade Walker, Newcastle upon Tyne

First the bad news. The joysticks that you use with your Amiga are a different sort to the ones used with a PC and won't work with it. The joystick used by the Amiga and most other computers is digital. That means that as you move the stick to one of the positions, a switch closes and makes a circuit that can be on or off.

A PC joystick is analogue. A couple of potentiometers measure the changing signal across the X and Y axis of the device and from their output the PC can work out the exact position of the joystick shaft. This is a more accurate, but more complicated system.

In order to interface your PC with an analogue joystick, you'll need a Games I/O card. This is generally a half- or one-third-length card with the necessary 15D socket for an analogue joystick.

Now the good news. It needn't cost an arm and a leg to set your PC up for joysticks. A games card can cost as little as £12.50 (All Formats show recently) and an analogue joystick can be had for about £20. And of course you could keep an eye on the *Shopping Express* reader ads for a good deal...

■ HELP! Amiga soundcard

Although the Amiga has undoubtedly the best sound of any computer, it can still be limited if in use as a sound module for MIDI. If I bought the Checkmate 1500 or Bodega Bay and a bridgeboard, could I run the Roland LAPC1 soundcard or is there a simpler way to achieve this result? It seems a bit expensive but it's what I want.

Tim Emmanuel, Golders Green

A much simpler and much easier way to achieve the same result is to attach a standard MIDI interface to the Amiga and then add a sound module to that using standard MIDI cables. The LAPC1 is a PC card with the sound capabilities of a Roland MT-32 sound module. You can generally buy an MT-32 fairly cheaply second hand, which would get you where you want to be hardware-wise.

All you'd need then would be some decent MIDI software and you'd be set up nicely. Your interface could cost you anything from about £20; a decent suite of MIDI sequencing software can be had for under £100 (Try *MRS* from Doctor T) and the MT-32 shouldn't set you back more than £100.

To do it the way you'd planned would cost you over £1,000 in hardware and software and you'd be no better off so far as sound goes.

■ HELP! What's in a name?

I heard that it's possible to replace the nasty 9-pin printer of a PCW with something a little better. An article in a PCW mag showed a PCW with a Star 24-pin printer attached. Is it possible to go a step further and run a laser printer from the PCW?

In the office where I work we have two laser printers (Epson) and these are shared by five computers. I noticed that a spare 'spur' under my desk seemed to be part of this set up. On asking, I was told that there used to be six computers attached to the printers. The set up involves a manual switch box - before you can use a printer, you have to switch it to your computer. The laser printers are used in Epson emulation mode and no-one would mind if I were to add my PCW to the office printer system.

I use *Protext CPM* on the PCW and I'm sure that this can be configured to drive an Epson printer.

May Vale, Truro

You will need a parallel interface on your PCW in order to connect it to the Epson laser set-up, but other than acquiring that bit of kit, the rest should be plain sailing and completely free!

Of course, you'll need to configure *Protext* so that it knows to drive an Epson Printer instead of the Amstrad nasty ninepin. Instructions on how to do this are in the *Protext* manual.

The parallel interface connects to the PCW via the edge connector at the rear of the monitor cabinet, and a standard parallel cable will connect the interface to the printer. Set the switch box to your spur and you'll be printing crisp laser copies from your PCW.

■ HELP! Amiga sound

After a year of eye-screwing-up we've graduated from a TV to a monitor for our Amiga A500. Following your advice some time ago, I purchased an Amstrad monitor from the Amstrad CPC series and my pictures are much clearer. Unfortunately, the monitor has no sound and although we've successfully connected the twin stereo phono outputs on the Amiga to the Hi-Fi, Dad doesn't like *Outrun* through his precious Bang and Olufsen.

Is there a purpose made mini stereo for the Amiga or can you suggest an alternative approach?

Tracey Laing, Telford

There are several companies advertising stereo amplifier and speaker add-ons for the Amiga. For a ready-made solution you could contact Trilogic on 0274 691115 – they do a teeny amplifier and a choice of either car-type stereo speakers or rather elegant bookshelf speakers.

If you want to mix and match yourself, try your nearest Tandy where they do a wide variety of amplifiers and speakers that could be adopted for your system.

■ HELP! Warranty worries

I was asked by security at Heathrow to open up my laptop so that they could check that it didn't have a Semtex battery. I argued and was allowed to prove that it worked by loading up and running some software from the hard disk. The thing that worries me is that as a regular traveller, I often take a laptop on a plane to work with. So far, it hasn't got as far as total disassembly but one day soon it may.

If I am forced to take the lap top appart to satisfy the curiosity of security men, will the warranty suffer? Will the manufacturer refuse to look at the machine if it has been tampered with in this way?

Gus Chandri, Birmingham

There's no simple answer to this - it all depends on the manufacturer. In simple terms, if you open up a computer it normally invalidates the warranty. This is a reasonable condition imposed by manufacturers to stop people meddling with the insides of the machine and then getting damage put right for free.

If you are forced to open the machine up, you should contact the machine's manufacturer and dealer as soon as possible afterwards. Explain the circumstances that the machine was opened in and ask them to inspect it and confirm that the warranty won't be affected.

They aren't obliged to do this and will probably charge you for the service, but with lap tops costing up to £8,000, your warranty could be worth a lot of money.

If the machine has only been opened for inspection and no damage has been done inside, there isn't any real reason why they should not want to extend the warranty coverage.

■ HELP! CPC Plus

The CPC Plus seemed like a good logical progression with its cartridge port and, having all of our software on disk, we bought the new machine. I have to say that it's a disappointment.

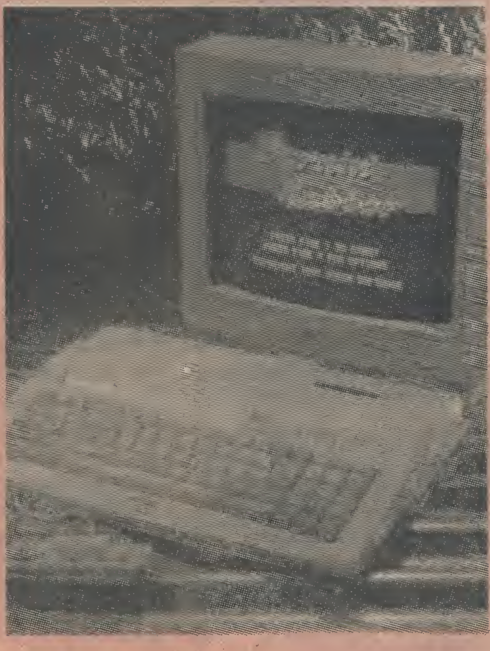
All of the exciting new features only work in the cartridge mode so we haven't made much of a gain on the original machine unless we buy cartridges.

I've learned enough CPC BASIC to write programs for my own entertainment and even taught the kids to play screen spirographs with Logo. I want us to get more out of the machine so it's time to learn machine language or assembler or whatever it is that produces all of the commercial games.

Is there a book which will teach me a bit about low level programming specific to the Amstrad CPC?

There are several books that fit the bill and whichever one I suggest, I've no doubt that someone else will suggest a 'better' one. Still I'll risk that. *Machine Code for Beginners* on the Amstrad (ISBN 0-7447-0025-6 at £6.95) should do the job without breaking the bank.

It was written by Steve Kramer seven years ago but for my money, offers a logical well defined approach to machine code programming. If you have difficulty getting a copy there are several other books that cover programming the Z80 processor of the Amstrad CPC series.



■ TIP! Punch drunk

I took 25 720K PC disks (3.5 inch variety) and using a hole punch, added the extra hole needed to persuade my PC that they are in fact 1.44Mb disks. The hole punch was on the desk anyway and the job took ten minutes. The PC will read and write to all but two which give a media error. That isn't much of a penalty when you consider that I've got the equivalent of an extra 23 disks for free.

What annoys me is that I've spent the last two years and a lot of my firm's money buying the expensive disks.

Roland Watkins, Glasgow

You aren't the first and you won't be the last person to realise that a minor modification to a disk can double its capacity. Although you have what seems to be a low failure rate (eight percent) you may find that the failure rate increases. The media on a 720K disk isn't as dense as that on a 1.44Mb disk and people using converted 720K disks have reported a high failure and data-loss rate.

If it is your company's valuable data that you are penny-pinching with, think again. The extra cost of guaranteed 1.44Mb disks is worth paying when you measure it against the cost of losing valuable data.

■ HELP! MIDI compatibility

My son pointed out the MIDI ports on his Atari ST when we planned to buy a keyboard for his sister for a forthcoming birthday. He is under the impression that if we buy a MIDI keyboard for his sister, they will be able to utilise his ST as a multi track recording studio for it. Is this true? He has a sequencer software package that he got in the public domain for a couple of pounds. Will this be what he needs?

Ron Bentham, Manchester

He is right. As long as you buy a keyboard with MIDI ports, you'll be able to use the ST and the sequencer to drive it. If you can get a multi-timbral keyboard this will be even better as you will be able to assign different MIDI voices to different tracks.

This means that you could for example record a bass on track one, piano on track two, strings on track three, and a couple of solo instruments on tracks four and five and percussion and effects on the remaining tracks.

You would be able to play back your orchestration in multi-timbral mode playing all of the tracks together.

The other good thing about MIDI is that it's expandable and grows with you. Tracks that you record on a £100 micro-keyboard today will play back on any instrument equipped with MIDI. This means that something recorded at home could be taken to a studio and played back on a £250,000 Synclavier. As your system grows you don't actually lose anything that you have worked on. Your compositions can grow too.

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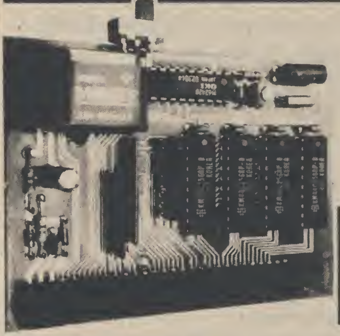

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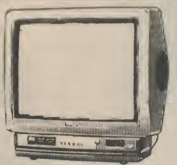

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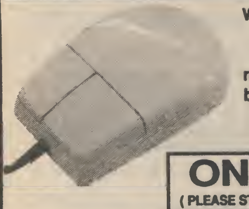

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OPENING TIME

Welcome, welcome. Forgers, thieves and cut-purses. That's what the news seems to be about at the moment. First we have viruses, then we have crackers, and now we have cartridge counterfeiters. Where will it all end? In my opinion the likes of these scum-bums should have various parts of their anatomies inserted into cut-sheet feeders until they promise not to do it again. All right, this sounds a little harsh in the present liberal climate but just look at Revolutionary France in the 1780's and onwards. The guillotine sat there in the centre of Paris doing its business. Were there any computer viruses, hackers, crackers or forgers? There were not! I rest my case. Don't get me wrong, I'm not calling for the return of capital punishment for these so-called self-styled 'people' just for a little more justice. That's that for now, rant over.

Computer games, now there's another rant which could be had. Did you know that *Super Mario Bros* has already sold so many copies that everyone on the planet has one even if they don't know it. Go on, look in the bread bin, or under the sofa or behind the dog, and you will spot a copy. Secret files downloaded recently show that Nintendo has began a marketing drive on Mars. The theory behind this practice is that if you get a brand name into some one's head when they are young, then you have for them for life. Well it works with the Catholic church. Nintendo's marketing folk decided to take that theory to its limits and, as it says in the file: " Getting product awareness instilled into five year olds is effective in the long term. So why not go further and hit a market before it has even evolved!".As I write, PR people are sticking speakers which play the theme tune and sound effects to SMBs into pools of primeval slime hoping that this will have a positive effect in the future. Marvellous what foresight can do innit?

A Centrefold Computer Marketing Clever Class: Lesson 1. Selling Yourself

By our media correspondent
Paul Boogle-Bargle-Hogarty

Hi there, Boogle-Bargle-Hogarty's the name and selling's the game. Let's touch base on a few concepts here. Figures suggest that there are now more computers on the market than there are people who want them. This goes double for peripherals, disks, screen filters. This scenario presents a challenge; even on the second hand market, can you achieve 'the sell'? I've been talking to a few people, putting some concepts on the stoop and seeing if the cat licks them up. One of the ideas which was on the hardball-quality-upside axis was to have a computer embedded in your head. Shows brand loyalty, shows commitment, shows other marketing people that you will do most things in the cause of 'the sell'. What follows is a look at one man who picked up this concept and ran with it. We will call him Mr X. Will we call the computer in his head, Dick.

As you can see from the illustration, the effect of a computer in the head is quite devastating.

Unhappily, the process can go horribly wrong leaving your genuine attempt at serious marketing looking like a pathetic, absurd, mockery and an insult to the intelligence of the buying public; known in the trade as 'the punter'.

The final pics show what can happen if your marketing cosmetic surgery is carried out by cowboys.

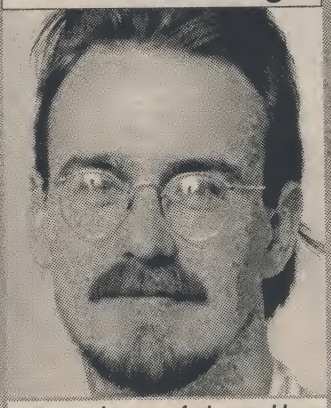
BEFORE (Correct)

• *Here we see Mr X with only the merest hint of airbrush surgery. Won't sell many computers that way. But later that same day some thing happened...*

AFTER (Correct)

• *Mr X discovered new 'Computer-in-the-forehead' a revolutionary new way to make a mint. Also included in the range is 'Telephone-in-the-skull'*

BEFORE (Wrong)



• *Here we have a perfectly normal human being. Nothing wrong here, until he went to a firm of cowboy marketing cosmetic surgeons in the quest for 'the sell' ...*

AFTER (Wrong)

• *Oh dear. It's all gone horribly wrong. This man would be lucky to sell a £2.50 Mac. Marketing surgery has blown it. From now on, Mr Y will have to live with this image.*

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Died: 12/11/91

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The basic problem for Barry was that he could only work in war torn areas under his bed, in a state of utter terror. This meant that the rest of his creative life was spent in Vietnam, Korea, and Beirut. He leaves behind him a bed. ■

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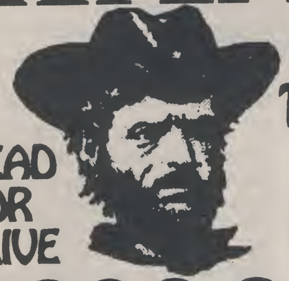

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AS EASY AS A B C

To use an object-oriented language, you'll need to know a little about programming in C. Mary Branscombe starts at the beginning . . .

The C programming language is called C because it comes after B, a variant of the BCPL language. C was designed and implemented by Dennis Ritchie and initially became popular in connection with the Unix operating system. Later versions of Unix are actually written in C, which should give a clear indication of the power of the language. The compiler written by Kernighan and Ritchie, known as K&R C, was a standard for many years, but there is now an ANSI standard for C, which has been used as the basis for C++, the object-oriented extension to C that we'll look at next.

C is a compiled language; programs are written in source code and compiled into object modules. These are linked to the library routines that are used for file handling and the like, so that the process of program development in a C environment involves an edit-compile-link cycle. The major differences between different C implementations will be in their function libraries, so that calls to these should be the only part of the code that needs to be modified if you move C source code to another compiler.

Comments in C start with /* and end with */, so /*this is a comment*/.

C can seem particularly terse and confusing so, as ever, it is important to use comments to document your program fully, for your own sake.

A C program is made up of several modules or functions and the main body of the program is contained in main. This has the form:

```
main()
{...
}
```

The brackets are used for any parameters that the function uses. The braces enclose the main code of the function, which usually begins by declaring variables.

C is a strongly typed language and the type of a variable must be declared when the variable is declared, because the type of the variable determines how much space it takes up in memory. Declarations are of the form: int no_of_characters, no_of_chapters; Variables begin with a lower case letter. You should not use any commands as variable names and as usual, you should use meaningful variable names; no_of_characters is better than chno. A semi-colon (;) is used to end every statement in C.

C SO FAR

These commands are used in the following code to calculate the hypotenuse of a right-angled triangle. The \n command prints a new line.

```
/*to calculate the hypotenuse of a triangle,
with the other two side lengths given by the
user*/
#include <stdio.h>
#include <math.h>
main()
{
int a, b, sq_one, sq_two, hypotenuse;
printf("enter the length of the two sides: ");
scanf("%d %d", &a, &b); /*read in values*/
sq_one = a*a;
sq_two = b*b;
hypotenuse = sqrt(sq_one + sq_two);
printf("\nHypotenuse is: %d\n", hypotenuse);
}
```

WHAT YOU GET

A good C compiler will offer a programming environment as well as just an implementation of the language; it should provide a debugger to help you correct code, and probably an intelligent editor that will help with missing brackets and the like. Another useful tool is a code animator, that shows a graphical representation of what your code does; for example, how long the program spends in each loop and when it branches from a conditional statement.

The data types found in ANSI C are: int, integer; short int, an integer between -128 and 127; long int, an integer in a much larger range; float, a number with a decimal point; double, a floating point number with 12 significant digits; char, a character and enum, an enumerated type. Enumerated types are useful for a limited number of constants where the name is important and the value is simply a way of distinguishing the constants. For example:

```
enum days
{Sunday, Monday, Tuesday, Wednesday,
Thursday, Friday, Saturday } yesterday,
today;
```

The days of the week have been used as symbolic constants which have the values from zero to six. We also have two variables, yesterday and today, which can store values of the type enum days. More variables can also be declared if we need them:

```
enum days tomorrow, christmas_day;
```

Variables can be global, local, static or non-static. Local variables are used within the function in which they are declared. Global variables are declared at the beginning of the program or the main function and they can be accessed from any point in the program. Global and static variables have a permanent memory location while local and non-static variables are stored in a temporary stack. The memory used by a local or non-static variable is freed when the program exits from the functions which use them. When a variable is declared, we can give it an initial value:

```
int age_one=24, age_two=27;
char ch_one='A';
```

If no value is given, the variable is initialised with a value of zero. If a variable is given a value within the program, this is done by an assignment statement:

```
int running_total;
running_total = 126 + 50;
```

gives running_total the value of 176.

When we pass a value to a variable, an assignment statement can only be used if we know the value already. If you want to store or calculate with a value to be read from a file or input by the user, things are a little more complicated.

- C offers low level control - but that doesn't make it impossible to use.
- Many functions are provided in libraries that you can include in your program.
- C can look terse and unfriendly - adding comments will make all the difference.

INPUT AND OUTPUT

A C compiler will not define input or output statements, so these will have to be included from the library. The statement used at the beginning of a program to include the standard input and output functions, stdio, which are stored in a type of file known as a header file is:

```
#include <stdio>
```

When the code is compiled, the contents of the header file will replace this line of code.

To read a character from the keyboard, or from a file, into the variable ch_one, we use the library function:

```
ch_one = getchar();
```

To print the character stored in ch_two, we use:

```
putchar(ch_two);
```

If we want to output more than one character at a time, we need to format the text and then print it to the screen, using printf, print formatter. There are a number of options to be used with printf, in the form:

```
printf("<output_format>", <variable_list>);
```

For numbers the most useful format is `%d`, which prints the number in decimal, as an integer. To print out a given string of text, inserting the values of variables from the list, these formatting commands can be placed inside the text string for the output format. So:

```
printf("There are %d characters in the %d
chapters of this book", no_of_characters,
no_of_chapters);
```

will print:

There are two characters in the 25 chapters of this book assuming the values of the variables are two and 25 respectively.

The string of text enclosed in brackets actually gives printf an address in memory where it can find the text, rather than passing the text directly. To read from the keyboard, we use scanf, scan formatted text, which also needs an address. The format is:

```
scanf("<input_format>",
<list_of_variable_addresses>);
```

The input format uses the same codes as printf, so that `%d` expects an integer. Rather than telling scanf what is already in the variables were we want to store what we read in from the keyboard, we need to tell it where to put the information read in. This is why we pass the address of a variable and this is done by using the notation &variable. To get the value of a variable whose address we know, we use *address. To read in two values and store them in the variables a and b, we use the command:

```
scanf("%d%d", &a, &b);
```

There are more functions in stdio.h for opening, reading, writing to and closing files. Other function libraries will be available with a good compiler. The math.h library will include functions such as the sqrt square root function used in the example code. ■

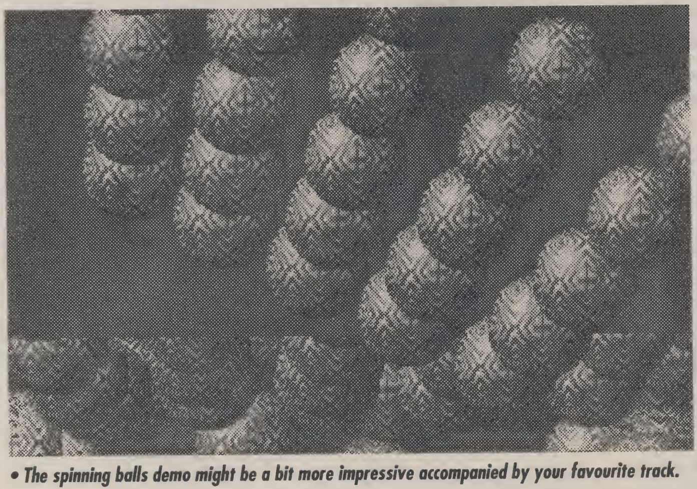
THE PD COLUMN

Frank O'Connor discovers some handy desktop utilities for the Amiga and a game that is not a load of Boulderdash in this weeks overview of the Public Domain.

Followers of the PD scene will have noticed that among the wealth of software to crop up on their machines (especially ST and Amiga owners) a good percentage is impressive – if staid – scrolly demos.

A couple of really nice examples have turned up on the Amiga this week. The demos are a collection of short, colourful graphic routines, some of which are totally and utterly mindwarping. The graphic demos themselves, while hardly likely to change the world, are accompanied – like most demos of this type – by a funky soundtrack.

This brings up an interesting question. Is there a program available on the PD scene for either the ST or the Amiga which is able to synchronise some neat effects with a stereo system? A sound/light convertor shouldn't be all that difficult to build. We often see suitably impressive graphics accompanied by their own groovy score, but it would be nice to listen to your favourite track, while your Amiga or ST jumped loops in sync with the music.


• *The spinning balls demo might be a bit more impressive accompanied by your favourite track.*

For example, bass notes could cause deep colour changes, trebles could influence shapes generated on screen, and *New Kids On The Block* could cause a total system failure. Seriously though, if anyone out there in PD land has a program capable of synchronising graphics with an remote sound source, drop a line to the PD column here at *Express*.

AMIGA GOODIES

A handy item for any Amiga owner to have on their desktop would be the latest utilities disk from Amiganuts United.

Not only does the disk have a nice, comprehensive range of utilities, but they are all very professionally presented, and easy to use. The options available on loading the disk are all selected with the mouse, making things as simple and intuitive as possible. The people who program public domain utilities, are generally technically minded, writing programs for others of a similarly techie persuasion, so it's nice to see the occasional piece of serious – or at least useful – software designed with the novice in mind.

The programs on the disk are mostly disk utilities, but there are a couple of complete system checks, allowing you to make sure that the fundamental components of your Amiga are in good working order.

The first utility, *Boot Shop*, allows you to create and use special boots, and also offers some degree of virus protection. The second program, *Fast Disk*, is a speed loading program, a sort of disk-based turboload if you like. Next is a program called *Noisetracker* – a very comprehensive sound-handling utility, offering sample-manipulating facilities in a simple icon-driven environment.

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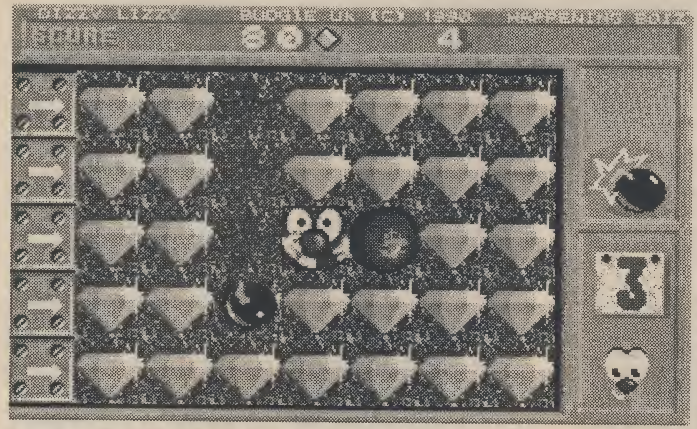

Dizzy Lizzy (by Budgy from Paradise Games) surrounded by diamonds – but next to a bomb

A potentially useless program, however, is the *Keytest*. This simply displays a representation of the Amiga's keyboard, and hitting the appropriate key on the computer, highlights its counterpart on screen. All well and good, but the thing is, you would surely only use this program if something went wrong with a key on the machine, in which case you would know it was faulty already! Still, better safe than sorry.

Also on the disk are a fairly simplistic IFF covertor, and a *Boot Menu Construction Kit*, which allows you to create much faster boot menus.

The next utility, the *Disk Coder*, is a simple password system for your disks which is handy to keep out prying eyes.

Finally, there is a sort of glorified catalogue program called *Disk Scanner*, and a complete system check, which tests the processor, audio and graphics chips. All in all, a useful and competent package, which even less serious users cannot afford to be without.

DEJA VU

Anyone remember that gnarly old computer classic *Boulderdash*? The one with that little termite dude, Rockford? Well a piece of software arrived recently called *Dizzy Lizzy*.

This game comes from Budgy, courtesy of Paradise Computers. Now it's not that the two games are similar or anything, just that they both involve guiding a cute little guy (well girl in the latter case) around a scrolling cavern.

Funnily enough they also both involve collecting diamonds, avoiding falling rocks and using the effects of gravity and inertia to make screens easier to deal with. So yeah, maybe there are a few similarities, but hey, they're only itsy, bitsy superficial ones.

The object of the game is to collect a set amount of diamonds, usually hundreds of the darn things. The diamonds are scattered around a large, scrolling screen, and are often out of reach, blocked by rockfalls.

Many of these rocks are supported by diamonds, and collecting a diamond lying directly under a rock, will cause that rock, and any above it to fall to the bottom of the screen, or to the next row of diamonds. This effect can be used to your advantage, and is often the only way to reach inaccessible diamonds.

Hampering your progress are two very irritating things; the first is a nasty little creature, who's pathetically cute features hide the inherent evil of his nature. The blighter will chase you around the screen, and only stop when he kills on contact.

The other danger is the presence of little black bombs. If the bombs fall, they will detonate, and rather than destroying stuff, they create walls. These walls can trap you, or completely cut you off from the rest of the diamonds.

Further levels can be reached by means of a password system, a system which at times is fussy beyond belief. If you a mistake while inputting a password, you have to wait an annoyingly long time for the chance to re-enter the password mode. Though the game starts off simply enough, things get very difficult very quickly, and the number of hazards with which you have to cope increases dramatically.

The graphics are hardly world stopping, and the sound is the usual ST chip warble. Fussy people might say the scrolling was among the most diabolical of all time, but great fun can be had rushing around the maze, and *Boulderdash* fans will lap it up. ■

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ABC AMIGA BEGINNERS' CLUB – PD library review. More info in beginners' pack. Send £1.50 to Ian, 110 Whitehill Park, Limavady, Co Londonderry, N.Ireland, BT49 0QG. Tel: 0504 765174

ACORN 8-BIT PD SOFTWARE – Write to Alan Blundell, BBC PD, 18 Carlton Close, Blackrod, Bolton, BL6 5DL. Send SAE for £1.50 for sampler disk

ACORN ARCHIMEDES.RISC USER 117 Hatfield Road, St Albans, Herts.

ACORN ARCHIMEDES Archive, 18 Mile End Road, Norwich NR4 7Q

AMATEUR RADIO (CBM) – Simon Lewis GM4PLM Commodore Radio Usrs Group, 69 Irvine Drive, North Clippens, Linwood, Paisley

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AMIGA HELPLINE SERVICES – Free club for young and old. Send SAE toG Keenan, 21 Skirsa Place, Glasgow, G23 3EE.

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AMIGA PUBLIC DOMAIN USER GROUP – Ashley Tarver, 5 Saunders House, Binswood Avenue, Lemmington Spa, Warks, CV32 5RZ

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AMSTRAD BUSINESS USERS - Amstrad Professional User Club, enterprise House PO BOX 10, Roper St, Pallion Ind Estate, Sunderland SR4 6SN. Tel 091-510 8787

AMSTRAD CPC USERS - Tony Baker, United Amstrad User Gp, 26 Uplands Crescent, Fareham, Hants PO16 7JY. Tel 0329 234 291

AMSTRAD CPC HOME USERS – Steve Williams, WACCI, 9 South Close, Twickenham TW2 5JE. Tel 081-898 1090

AMSTRAD LOCAL GROUPS - Amstrad Groups Federation, 4 Sutton Road, Gorton, Manchester

AMSTRAD PC SOFTWARE - Colin Smith, Colbar, 10 Penwood cl, Westbury, Wilts BA13

AMSTRAD PCW - PD software: Bob Ellis Tel 0432 761860 Queries: David Axford Tel 0428 56438

AMSTRAD PCW - Bob Ellis "Rowan" 100 St Peters Close, Moreton-on-Lugg, Hereford HR4 8DW. 0432 761 860

AMSTRAD 1512/1640/PPC - PC Independent User Group, The Computer Advice Centre 87 High Street, Tonbridge, Kent. Phone 0732 771 512

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APPLE MACINTOSH. John Lewis, Macintosh user group, Macintosh House, 11 South Parade, Summertown, Oxford OX2 7JL

APPLE SYSTEMS – Irene Flaxman, Apple 2000, PO Box 3, Liverpool L21 8PY.

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ASHTON TATE SOFTWARE - Silvia Robinson, Baseline, Ashton-Tate, 1 Bath Road, Maidenhead, Berts 0628 33123. Prestel page 43221

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ATARI ST DIY HDISK BUILDERS CLUB – information on how to build from scratch an HDisk system for your ST. Help given on what you'll need and how to connect it all up. Call 0495 272092

ATARI ST OWNERS – public domain from £1.50 per disk. Write to22 Merryfields Avenue, Hockley, Essex, SS5 5AL

ATARI ST SOFTWARE – write to 16/32 PD library 35 Northcote Road, Strood, Kent ME2 2DH

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BBC MICRO - BEEBUG, 117 Hatfield Road, St Albans, Herts AL1 4JS. 0727 40303

BASIC PROGRAMMERS' GUIDE – for all BASIC programmers. Phone Andy on 081-648 4326.

BATPUG – Turbo Pascal user group also open to other PC Pascal programmers. Costs £10 per year. Write to 12 Clegg Avenue, Cleveley's, Blackpool, FYS 9BJ. Send an SAE for sample.

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BYTER PD – For list and latest titles of Atari ST and Amiga PD write to Byter PD, PO Box 182, London, SE6 1BZ

C64 PD CLUB – E Masaba, 84 Garmoyle Rd, Liverpool L15 3JH

C64 PUBLIC DOMAIN – Phoenix, 64 Plumberow, Basildon, Essex

C LANGUAGE – Bi-monthly newsletter, C source library and BBS. £14pa. Contact Francis Glassborow, 64 Southfield Road, Oxford, OX4 1PA.

C USERS GROUP – Francis Glassborow, 64 Southfield Road, Oxfoed OX4 1PA. For everyone interested in the C and C++ programming languages. Publishes a bi-monthly newsletter.

CAMBRIDGE Z88 - Roy Woodward, Z88 Owners' Club, 68 Wellington St, Long Eaton, Nottingham

CD ROM - UK CD-ROM User Group, High Wings, Salem, Treforys, Abertawe 0792 844 370

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COLECO ADAM - Keith Mamer, UKAS 33 Homer Road, Croydon CXR0 7SB

COMMODORE ALL MICROS - Jack Cohen, ICPUG, PO Box 1309, London, N3 2UT. Tel 081-346 0050 after 6pm

COMMODORE 64 CLUB has been on the go for the last five months and new members are welcome. For more details send an SAE to The C64 Club, 20 Finlow Place, Dundee, Scotland

COMMODORE AMIGA - UK Amiga Users Group. Contact 144 Charles Street, Leicester LE2 0OD. Telephone 0533 510066 voice; 0533 517615

COMMUNITY COMPUTING - Community Computing Network 2nd Floor, 35 Pink Lane, Newcastle, NE1 5DW. Tel 091-261 0317

COMPUCORP. Compucorp University users group c/o Compucorp, Cunningham House, Westfield Lan, Kenton, Middx

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CPM & MSDOS Users Group – 42 Birkbeck Road, Wimbeldon, London SW19 9NZ. Tel 081-543 0824

CRYPTOGRAPHY & CODES - Mike Barlow, American Cryptogram Association 5052 Chestnut Avenue, Pierrefonds, Quebec HBZ 2A8 Canada

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ECONET - Michael Ryan, Econet User Gp, Balkeerie Cottage, Eassie by Forfar, Angus DD8 1SR

EDUCATION – Charles Shannon, TECUG, 35 Wellington St, Gravesend, Kent DA12 1JG. Tel 0474 567 931

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ENTERPRISE – William Creaser, 6 Provident Street, Shaw, Oldham, DL2 8AQ. Independent Enterprise User group. Tel 0706 881382

ENTERPRISE - Tim Box, Independent Enterprise User Group, 50 Holdenhurst Avenue, Finchley, London N12 0HX. Tel 081-346 8032

ENET (like Econet) - T K Boyd, Enet (Amcom) User Gp, Seaford Cottage, Petworth, West Sussex

EXMOORE SOFTWARE – Queen Street, Lynton, N Devon EX 35 6AQ

FIND YOUR LOCAL CLUB – British Association of Computer Clubs. Database of all user groups in the UK. Banc y rhosyn, 14 Bron Y Glyn, Bronwydd Arms, Carmarthen SA33 6JB.

FORTH Language – Douglas Neale, FIG (FORTH Interest Group) UK, 58 Woodland Way, Morden, Surrey SM4 4DS

FRACTALS/CHAOS THEORY - Andy Lunness, 69 Bronte Avenue, Bury, Lancs BL9 9RN. Telephone 061-764 6469

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GENEALOGISTS - Computer Group, Society of Genealogists, 14 Charterhouse Buildings, London EC1M 7BA. 071-251 8799

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GUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX. Telephone 021-722 3168

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LOCAL AUTHORITIES – Local Authority Micro User Group, John New, Borough Engineer's Dept, Municipal Offices, North Quay, Weymouth, Dorset DT4 8TA.. Tel 0305 785101 ext 272

LOTUS PRODUCTS - Lotus User Group, 79-80 Peascod St, Windsor, Berks SL4 1DH. Telephone 0753 841686

LYNX – R B Jones, Lynx User Group, 39 Ashton Close, Needingworth, St Ives, Cambs

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NASCOM/80-BUS/CPM - Scorpio Systems, PO BOX 286, Aylesbury, Bucks HP22 6PU.Tel 0296 624868

NEW BUG COMPUTER CLUB – Support for all machines. Metts weekly at Oxclose Multi-Purpose Centre in Washington each Tuesday at 7pm. All welcome, visitors 50p

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NIMBUG – write to 13 Belle Vue Ave, Gosforth, Newcastle-upon-Tyne NE3 1AH. Tel 091-285 7806

NINTENDO GAMEBOY – I would like to start a user group for the Game Boy. Write to Justin Spencer, 2 Rose Villas, Thurnholmes Farm, Owston Ferry, Near Doncaster DN9 1BE or Tel 042772588

NW ARCHIMEDES USER GROUP – Meets every Friday at Citizens Advice Bureau, next to Spectrum arena in Birchwood, Warrington. Ring Paul on 051-426 3915 after 6pm

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OS/2 - Karen Burns, OS/2 User Group,Cecily Hill Castle, Cirencester, Glos LG7 2EF. Tel 0285 655888

OSBORNE/CPM/MSDOS – write to Jeremy Browne BOOG, 102a Aldershot Road, Fleet, Hants GU13 9NY. Tel 0252 621745 voice or 626233 BB

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RESEARCH MACHINES - Steve Rochford RM National User Group, George Stephenson High School, Southgate, Killingworth, Newcastle NE12 OSA. Tel 091-268 2002

REVELATION (PICK) — write to Malcolm Frame, UK Revelation User Group, 136 Saint Albans Road, Watford WD2 4AE or Telephone 0923 35515

R:BASE – write to Mrs Tansy Beal, R:Base User Group c/o Room A2044 BBC Woodlands, 80 Woods Lane, London W12 OTT. Telephone 081-576 7187

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SPECTRUM DISCOVERY CLUB – magazine on disk for the Opus Discovery Disk Drive and the Sam Coupé. BD Mumford, 57 St Saviours Road, West Croydon, Surrey, CRO 2XE

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STOS magazine, out every month.Send an SAE for full details to 11 Shore Crescent, Bishops, Waltham, Hants SO3 1DZ

STOURBRIDGE ATARI USERS' GROUP – for 8-bit Atari computers.Send SAE to LK Taylor, 99 Bredon Road, Stourbridge, West Midlands, DY8 4LA. Telephone 0384 379575

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TEXAS T199/4a - Peter Brooks, International TI User Group 96 Banbury road, Oxford OX2 6JT. Telephone 0865 510822.

THUNDERNEWS – CBM 64 user magazine on disk/tape. Send sae for details and competition to 159 Hough Road, Wallsall, West Midlands WS2 9BG

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UNIX USERS – UKUUG Secretariat Owles Hall, Buntingford, Herts, SG9 9PL. Tel 0763 73039 /73255 (fax)

VENTURA PUBLISHING - VPU (Ventura Publisher User group) Linda Liddell VPU c/o LLA Lound House, Forncett St Mary, Norfolk, NR16 1JP. Tel 0508 41580

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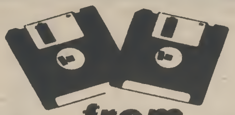

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Power portables needn't break the bank. Keith Pomfret searched the world of advertsing and found one at an incredibly cheap price.

A year ago the thought of any true laptop costing under £500 was enough to raise an eyebrow. In the last 12 months, new models have arrived and prices have dropped. First to break the £500 barrier was the Bondwell B200. A reasonably specified machine, it was still without a hard drive.

The Epson Equity has been around for some time and falls into the category of 'heavy lap top'. This means that it has a battery pack and can work away from the mains, but weighs in at over 10 pounds. The original Equity had 2,720K and 3.5-inch drives, but in this version, one has been replaced by a 20Mb hard disk. Distributor for the hard drive Equity is UK Home Computers and boss Ron Gladwin said: "We're offering what people want ... a hard drive laptop. But our price is one that they can afford."

If the sub £500 laptop was an unheard of make from the Far East it would be enough to make us look twice, but to be a product from a quality manufacturer like Epson makes it worthy of immediate note.

VALUE

For your £499 (plus VAT) you get the Equity LT lap top computer configured with a 3.5-inch floppy disk and a 3.5-inch 20Mb hard drive. The machine has 640K of memory and a supertwist LCD display. The LT is a true portable with an AC power pack that can power the machine from a mains socket and charge the on-board battery. There is a socket to allow the connection of a colour CGA monitor. An expansion socket has room for a single 8-bit half card and Epson produces an optional modem card to fit it. A second slot is used by the controller for the hard disk.

It is possible to add an external 5.25-inch drive and the floppy disk controller can handle two floppies of either size. The hard disk controller card is generic to the internal drive.

INTERFACES

Printers are reached by a standard 8 bit parallel port conforming to 25D female configuration. As this port is also used for an external disk drive, it is either printer or disk drive unless a splitter box is fitted.

The serial port is an RS232C programmable asynchronous port and has a 9-pin D male connector. If the serial port isn't to be used for comms or suchlike, connection to a serial printer offers a workable solution if the parallel port is in use with a disk drive.

The monitor/display connector is the normal 9 pin D connector and allows the display to be echoed to a standard colour monitor. The LCD screen has a 1.4 aspect ratio and display characteristic of 200x640 pixels in graphics mode and 25 lines of 80 characters in text mode.The LCD screen is of standard reflective type.

With a fully charged battery, Epson claims NiCad has a life of five to seven hours usage. Depending on hard drive access, we found a more reasonable time to be two to four hours. With a disk intensive application, a couple of hours had the warning light winking, but simple word processing with drive access every 15 minutes or so almost doubled that. The mains unit works from 200/240v AC and puts out enough power to recharge the 9.6v NiCad battery pack while running the machine, although it charges more quickly if it isn't in use.

• Unbelievably cheap – the Epson Equity hard drive laptop.

CPU AND MEMORY

The processor in the LT is the NEC V30 switchable between the standard XT rate of 4.77MHz and a turbo 10MHz. ROM is 16K and RAM is standard 640K with parity. There is no provision on the main board for memory expansion.

SIZE IS EVERYTHING

The Equity LT is quite a lump by laptop standards. It is 12.2 inches x 13.6 inches x 3.2 inches The basic hard drive model that we reviewed was 6.22kg. The LT opens up in the traditional clamshell mode to reveal a good solid keyboard. The keyboard is of high quality and unlike many of the smaller models, doesn't cut corners. It is an 85 sculpted key unit and unusually for a laptop has a proper numeric keypad. There are 10 definable function keys, 17 keys in the numeric/cursor cluster and 58 keys in the QWERTY layout.

The LT is heavy and the handle was designed in the days before Epson had heard of ergonomics. This might have been a problem, but for the low price and anyway, UK Home Computers are bundling a carry case with the LT so the handle won't see much use.

As it comes the LT has a standard LCD CGA screen. A backlit version is available as an option as is a converter to allow connection to the cigar lighter in a car (or cigarette lighter if it's a cheap car).

The backlit screen is a full transmissive type.

SOFTWARE

The Operating System that comes with the Equity LT is MS/DOS 3.3. This is still preferred by many who have not come to terms with the later 4.01 version. With a hard disk drive of only 20Mb the later version isn't needed for disk management as the internal hard disk doesn't exceed the 32Mb storage limit set by this earlier version of the operating system.

Also included is GW Basic. This popular variation of the BASIC language seems to be almost a statutory requirement with PCs and is a usable, if not much used environment.

The Equity took everything that we threw at it software wise and its LCD screen was no worse or better than other similar machines. It drove a monitor with no problem and if you have need for a computer in the office and on the move and you don't require the use of expansion slots or a graphics standard better than CGA, the Equity LT could be a cost conscious answer. With a cheap CGA monitor you'd still be the best side of £650 and have a hard drive PC that could be used in office or out and about. The feature of the LT that makes this most workable is the 'proper' keyboard with a separate cursor cluster/numeric keypad and full travel sculpted keys.

The Epson Equity is cheap, sturdy, of good parentage and from an established company. The first hard drive lap top to break the £500 barrier is the best bargain that we have seen for ages.

Epson Equity LT Hard drive costs £499 plus VAT and includes carry case MS DOS 3.3 *and* GW BASIC. *Contact UK Home Computers on 0793 695034.*

On page 61 of *Express* 124, the telephone number for the *PC Collection* supplier was wrong. It should have read: *The PC Collection* is available from Millgate Resources on 0628 784001.

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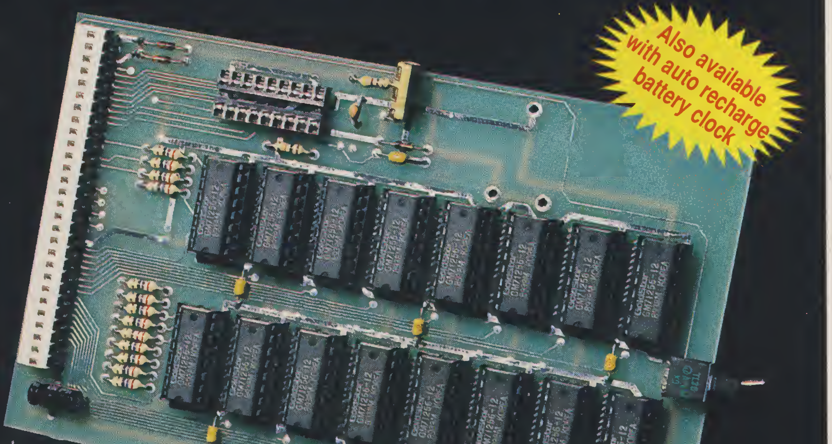

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GAMES WEEK

Neil Jackson gives you the low-down on the latest new games, playing tips, cheats and news.

This week Entertainment International seems to be having a bit of a bonanza, and is announcing no fewer than five titles which they expect to see on sale this year. Its most prestigious must be ***Wrath of the Demon*** from Readysoft, the brains behind such games as ***Dragon's Lair*** and ***Space Ace***.

But why is ***Wrath of the Demon*** any different from the aforementioned games, which, let's face it, were not exactly the most interactive of pastimes, were they? Well, at long last Readysoft is able to do justice to its particular game-style, using the advanced hardware inside the Amiga CDTV system. ***Wrath of the Demon*** utilises the massive storage space inside the new machine to stack away over three megabytes of graphics. That amounts to a cool 600 screens-worth of action, plus 1,400 frames of animation, with more than 100 colours on-screen!

The game conforms to the usual wafer-thin plot; you have to help the hero kill the evil demon whose henchmen are trashing the kingdom and get off with the gorgeous princess. Oh well, at least it promises to be colourful. No dates available for release yet, but Games Week will keep you posted.

A slightly less mega-techie title is ***Eye of the Storm***, a 3D vector-graphics space-game. Entertainment International says it features over 120 different types of objects, including fish, plants, mammals and faces. There are even a few techno-advancements in this too: underwater scenes are accompanied by realistic sound effects, and Gouraud shading is used to give the objects in the game true 3D appearance. ST, Amiga and PC owners can look forward to this sometime in September this year.

San Francisco in the late 21st century seems to be a popular place and time for game-scenarios at the moment. We have already seen ***The Killing Cloud*** from Vektor Grafix, and now it's time for ***Cyber Space***, Entertainment International's futuristic role-playing game. In darkest 'Frisco, the natives are revolting (cue obvious joke) against the rule of the MegaCorporations. Punks and Netheads are laying waste to media stars and Cybernetic mercenaries in an attempt to stop the corporations from controlling the world by television, radio and print. ***Cyber Space*** has complex rules of travel, combat and espionage, which suggests it's a deeply-involved strategy-game. You can create a wealth of characters and develop and enhance them as you progress. Look out for this in October, on PC, ST and Amiga.

Still in the Sci-Fi roleplay vein, Entertainment International is releasing ***MegaTraveller 1 – The Zhodani Conspiracy***, during April on ST, PC and Amiga. This features sophisticated character generation, with five military classes and more than 70 talents and abilities. Eight different solar systems contain 28 planets where you will find all kinds of puzzles, sub-plots and interesting encounters. You have more than 30 weapons systems at your disposal, but will you have the skills to use them? Medicine, flying, communications, bribery and laser-armaments are all areas which you can learn about to help your character. Aficionados of the ***MegaTraveller*** board-game system will already be aware of the depth and quality of the system – newcomers will find it a powerful introduction into the role-playing genre.

Finally, the company has announced ***Volfiev*** – the Taito coin-op conversion. This simple but addictive shoot-'em-up features giant crabs, killer ladybirds and an eyeball-spewing head! I wonder if there's any plot? Look out for this in June for PC, ST and Amiga. ■

TOP 10 ALL FORMATS CHART

THIS WEEK	CHART WEEK	TITLE	PUBLISHER	MACHINE
1	17	*Teenage Mutant Hero Turtles*	Mirrorsoft	ST AG SP CO AM OT
2	16	*Dizzy Collection*	Codemasters	SP CO AM
3	3	*Turrican*	Anco	ST AG SP CO AM
4	6	*Big Box*	Beau Jolly	ST AG SP CO AM
5	2	*SWIV*	Storm	ST AG SP CO AM
6	3	*Mickey Mouse (SG)*	Sega	OT
7	12	*Total Recall*	Ocean	ST AG SP CO AM
8	12	*Golden Axe*	Virgin	ST AG SP CO AM
9	16	*Robocop 2*	Ocean	ST AG SP CO AM
10	5	*Lemmings*	Psygnosis	AG

ST = Atari ST AG = Commodore Amiga SP = Spectrum CO = Commodore AM = Amstrad OT = Other
Chart compiled by Gallup. © European Leisure Software Publishers Association.

Tip of the Pops

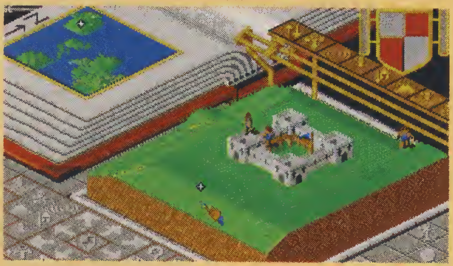
POPULOUS
Amiga and ST

Start each game by using Raise/Lower to make at least one large castle. Place the Shield icon on the castle's flagpole and wait until the green strength bar reaches halfway. Then raise the land at one corner of the castle to kick out the traveller. When he's out, lower the land again to rebuild the castle and then repeat the whole process. With this method you have more manna and more travellers to work with.

When you are about to Knight your leader, place the Papal Magnet on a clear piece of ground and raise the land into a cone, about three levels high. Then select Go To Magnet and search your land for castles. Once a traveller has been evicted, raise the land at one corner and then immediately lower it to regain the castle. Go back to your leader (who will now be considerably stronger thanks to the increased absorption of travellers) at the Papal Magnet. Check the place for swamps – the leader should be okay if he's on a cone, as only flat land can be swamped.

When you and the computer are closely matched and have similar forces, go to the area on the map where your buildings and his meet. Go as deep into his territory as you can while still retaining at least one of your houses on screen. Then raise the land as far as you can (at least four levels) to totally wreck his buildings. This is actually more useful and costs less manna than a volcano, plus you can reclaim the land later without having any rocky lumps to worry about.

After the computer has Knighted, if you are still low on strength follow the knight around and destroy your own buildings before he reaches them. In this way, you slightly lower the knight's energy each encounter, without letting him destroy the land around the buildings. This makes rebuilding easier. A strong leader can kill a weak knight, so follow the knight about with the Papal Magnet and select Go To Magnet while kicking your people out of the castles. Don't miss an opportunity to dunk a knight in water (by dropping the land under him) as this also decreases his energy, especially in the earlier levels.



Often, the computer will swamp a large mass of your land and the first warning you get is the sound of drowning people. Pause the game as soon as you hear this, and look around for your Papal Magnet. It's likely to be a the central point of the swamp. If the area's too big to deal with by normal Raising/Lowering, just earthquake the whole lot. The swamps disappear, and you are left with a more simple repair job.

Knight your leader as soon and as often as possible (even if it looks like you are losing). You collect loads of points for knights, though slightly less than using the Armageddon option.

BRAT
Mirrorsoft £24.99
AMIGA and ST

Romper rogue on the road

After the usual sequence of software house ident and programming team credit, there follows a short animated sequence which puts *Brat* head, shoulders and nappy above the rest. Complete with crisp sampled sounds, you witness the small angelic Nathan turn into a streetwise dude with an excessive baseball cap and shades. "Time to party, dudes," he cries before plastering the screen with the game's title using his squirt gun.

Next is the game's main menu, where you will find three different types of demo, a password-to-level entry system and the main route into the world of *Brat*. You can choose which part of the world you see in the demo and then sit back and listen to the excellent in-game tune whilst picking up a few playing tips from the invisible hand which leads Nat the Brat through part of the demo level. When you reckon you have cracked the methods involved, you can enter the game, but always in the same place – Toyland.

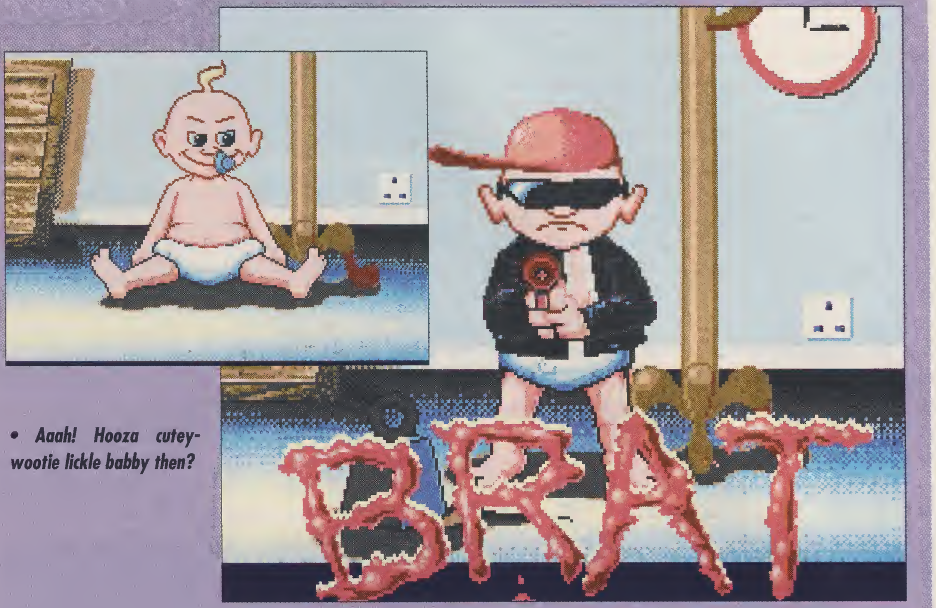
Here your task is to direct Nathan safely through a toy-infested route by placing arrows in his path. The game's isometric 3D layout can force you to look twice at everything to start with, but you soon get used to working out straight paths in all directions. Then you click on the toolbox panel, selecting and placing the right icons to make Nathan turn at the corners, or pause him momentarily to gain a bit of route-deciphering time. Most of the time he will just toddle along, collecting bits and pieces as he goes, occasionally booting a toy or two out of the way. The bits he picks up you can use, and there are all kinds of things you need. For example, Nathan will pick up dynamite for blowing up track-blocking rocks, and weights for holding things down. But it is up to you to work out where to use them.

Meanwhile, as you are busily trying to crack all the logic puzzles, time is marching on. Time, in the form of the upward-scrolling screen, can be halted (providing Nathan's picked up the right bits), but only for a short while. If Nathan gets too close to the top of the screen (or worse still, goes beetling off in the wrong direction) he will be knocked off.

Sometimes keeping Nathan on the right tracks is nigh-on impossible. Occasionally, there is not even a track at all! Then you need to include bridge-building in your repertoire, as well as direction-finding. Later levels include sliding bridges which can spell disaster unless you have Nathan under perfect control. But even perfect control can elude you – each direction sign, stop signal, and bridge-part costs money which Nathan has to collect in the form of coins and gems. And if you can't direct Nathan to pick it up, well...!

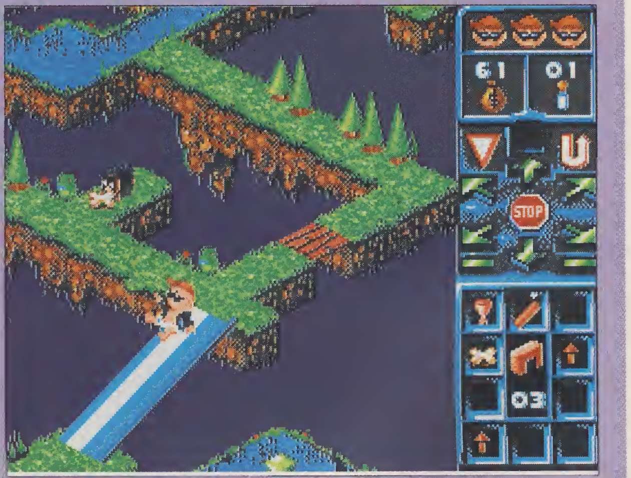
There is really a lot to contend with, and your first few attempts are likely to be punctuated with cries like, "Ah, but I know what to do next time...", until you find you have been at it for ages. *Brat* is definitely one of those games that calls you back time after time, especially when you actually get to see Nathan's lives run out. Being put down by a one-year-old infant shatters your self-respect and makes you want to prove yourself!

Most games are made from hard slog, late nights and plenty of coffee. *Brat* looks like one of these but it has an extra ingredient: it is a concept which has been thoroughly worked through on every level! Even the voices in *Brat* are the voices of a real mum and her son! From start to finish, *Brat* is an enjoyable, amusing and beautifully polished piece of entertainment which reflects the care and attention that has been lavished on it. Now that's what real games are made of.

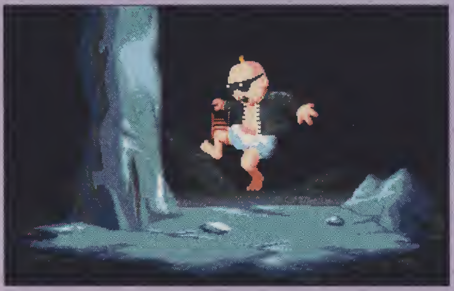


• Aaah! Hooza cutey-wootie lickle babby then?

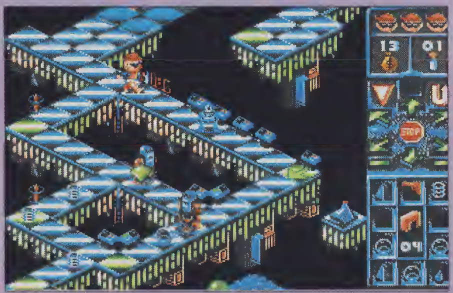
• Er! Certainly not Nathan, the supercool infant terrible, star of Brat.



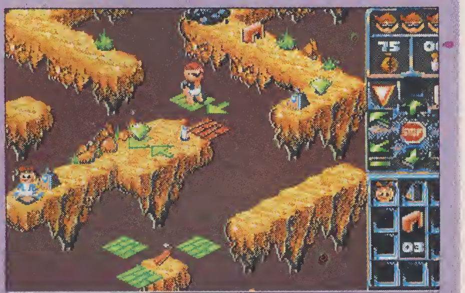
• Whee! Where else would you find a slide, but the Park? Beware of the fat rotweillers who give chase, and keep an eye open for killer sharks in the boating pools.



• Mess it up and Nathan falls off the edge of his dream-world. Babysitting was never fraught with this much danger before!



• Direct Nathan through the Moon Base, where robots roam and giant pits open up underneath his tiny feet.



• The contents of Nathan's toy cupboard have escaped. Get through Toyland, dodging the Jack-in-the-Box and the Tin Soldiers.

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SCSI HARD BARGAINS

Buying a hard disk off the shelf can be a hard decision to justify, if only in terms of price. Instead, why not build one for your ST? Andy Storer test drives Ladbroke's 105 Mb hard disk.

Life's never been the same." "I don't know how I got by without one". "It transformed my whole way of working." "Give me back my hard drive or I'll extract your lungs through your nostrils."

These are just some of the responses you're likely to come across when you ask the average hard disk owner what difference a small magnetic platter made to his computing life. So what's the big deal?

Well, with some computers you just can't get by without one – the Mac immediately springs to mind here as its operating system has to be loaded off disc every time you want to do... well, anything. Okay, the ST's much better supported in this respect as all calls and functions reside in ROM, but it's still a drag to search through trays of disks for that essential utility you need right... *now.*

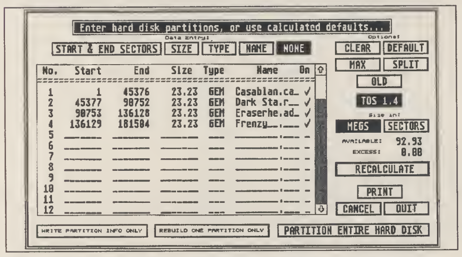
Also, floppies tend to go down far more often than a hard disk – so much so that they're best regarded as temporary media – and in addition, these days even games software comes on so many disks you're changing between them left, right and centre. Finally, loading off hard disk is so much faster than floppy – and we don't need comparative timings to prove that do we?

No. (But in case you're wondering the answer's 11Ms.)

HARD DRIVING

So in the meantime you might like to take a look at one of the Quantum hard drives available from Ladbroke; either the 52Mb for £420 or the 105Mb for £530. These are both 3.5 inch mechanisms, with their own power supplies, and come in plain cream cases.

The external power supply means that they're not trying to suck any more current from the already overworked ST power supply. This is good news for your ST which won't have to run above its approved specification and, more independent, good news for the hard drive. The independant power supply offers the Ladbroke drive (shouldn't that be Ladbroke Grove... Ed) smoother and more stable power than if it were trying to overdrive the ST's internal power supply.


Enter hard disk partitions, or use calculated defaults...
Data Entry:
START & END SECTORS
SIZE
TYPE
NAME
NONE
Options:
CLEAR
DEFAULT
MAX
SPLIT
OLD
TOS 1.4
Size in:
MEGS
SECTORS
RECALCULATE
PRINT
CANCEL
QUIT
WRITE PARTITION INFO ONLY
REBUILD ONE PARTITION ONLY
PARTITION ENTIRE HARD DISK

```
No.   Start     End      Size  Type      Name      On
=====================================================
 1        1    45376    23.23  GEM  Casablan.ca_   ✓
 2    45377    90752    23.23  GEM  Dark Sta.r__   ✓
 3    90753   136128    23.23  GEM  Eraserhe.ad_   ✓
 4   136129   181504    23.23  GEM  Frenzy__.___   ✓
 5  ______   ______    ______  ___  ________.___   _
 6  ______   ______    ______  ___  ________.___   _
 7  ______   ______    ______  ___  ________.___   _
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 9  ______   ______    ______  ___  ________.___   _
10  ______   ______    ______  ___  ________.___   _
11  ______   ______    ______  ___  ________.___   _
12  ______   ______    ______  ___  ________.___   _

AVAILABLE:  92.93
EXCESS:      0.00
```
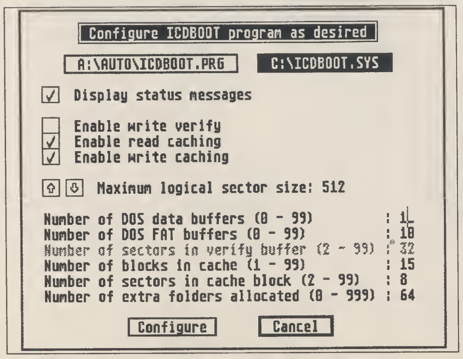

•*From the ICD Handbook, the menu for drive partitioning*

They also feature DMA Out ports which means, if you're so inclined, you can daisychain up to eight SCSI devices to each other. With up to eight hard drives and other SCSI devices hanging off the back of your ST, it's good to know that the controller can work in octopus mode. This single controller can manage up to 255 partitions occupying one gigabyte of storage space.

This kind of partitioning means that you can divide all those Mbytes up into logical devices, each occupying say 10Mbs, which can be assigned different drive names. As such, Drive C could hold all your ST system software while D holds the Spectre GCR Macintosh emulator and Drive E one of a choice of PC emulators.



```
☑ Display status messages

☐ Enable write verify
☑ Enable read caching
☑ Enable write caching

Maximum logical sector size: 512

Number of DOS data buffers (0 - 99)              : 1
Number of DOS FAT buffers (0 - 99)               : 10
Number of sectors in verify buffer (2 - 99)      : 32
Number of blocks in cache (1 - 99)               : 15
Number of sectors in cache block (2 - 99)        : 8
Number of extra folders allocated (0 - 999)      : 64
```

• *The menu for configuring the ICD Hard Disk Drive.*

This logical approach to device assignation can also be used to compartment a drive for different applications. Logical drive D: could be for word processing, E: for DTP, and so on, making it easy to keep track of files in mass storage.

The great rush toward single logical devices on the PC brought by the later versions of MS/DOS hasn't necessarily made PC computing easier and even with later versions of DOS, many users are returning to the use of small logical devices rather than a single physical one.

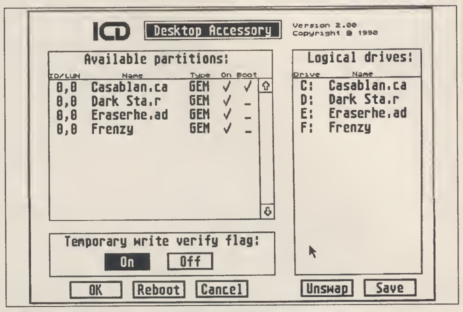
ACCESSORIES

There are a useful suite of utilities provided with the Ladbroke drive. Although the ICD disk (double-sided, incidentally; return it and a single-sided replacement will be sent free of charge) is supplied already formatted there's a program which does this job, allowing you to customise the disk format to your use.

A small elegant wad of code performs the function of enable and disable for the autoboot function, thereby leaving this decision in the hands of the user – not the machine.

To make total control of the hard disk environment a reality, there's a desk accessory that allows up to 64 partitions per drive to be selected, switched on and off, renamed, etc, while on the fly. And an access prevention feature can protect data from prying eyes and small fingers.

The 11Ms access time of the Ladbroke drive is attained in two ways. First, the drive has a rapid (typically 20Ms) access time. A RAM disk cache optimises this so the perceived speed is the 11Ms claimed.



```
Available partitions:
ID/LUN  Name          Type  On  Boot
0,0     Casablan.ca   GEM   ✓   ✓
0,0     Dark Sta.r    GEM   ✓   _
0,0     Eraserhe.ad   GEM   ✓   _
0,0     Frenzy        GEM   ✓   _

Logical drives:
Drive  Name
C:     Casablan.ca
D:     Dark Sta.r
E:     Eraserhe.ad
F:     Frenzy
```

• *And, from the same source, the Desktop Accessory menu .*

Finally, the documentation provided is a slim A5 manual that takes the user through each step of installation use and feature in a simple to follow form.

SOFT OPTIONS

ICD hard drive kits start out at around £70 and basically supply you with everything except the hard disk itself. These you can pick up as bare items from a company like UK Home Computers on 0793 695034 for around £100 for a 20Mb unit. The ICD kit comprises the Host Adapter, allowing you to communicate with other SCSI devices, the controller and shielding, the casing, a fan, a power supply unit, the required cables and the mounting hardware. This DIY enterprise is not difficultand will be a Circuit City project in the near future.

Finally, are you wondering whether £420 for 52Mbs of storage space isn't just a little expensive when a 1Mb STE only costs £370? Perhaps. But think of the advantages and, once you're convinced, shop around. ■

HARD ALTERNATIVES

If you fancy some hard driving of your own, here's a list of suppliers and contacts:

Ladbroke (0772 203166):
3.5 inch hard drives: 52Mb, £420;105Mb, £530
Full Circle Technologies (0622 677173):
Vortex Datajet hard drive and AtOnce PC emulator £535
Power Computing (0234 273248):
Slimline hard drives: 20Mb, £325; 40Mb, £425; 110Mb, £599. Build your own interface units from £69 up to £99
Rewriteable optical drives: 600Mb, £2,995 (with additional magneto-optical removable cartridges at £249 each – any chance of some review kit at long last fellas?)
Evesham Micros (0386 765500):
NEC hard drives: 40Mb, £399; 100Mb, £599
Atari Megafile: 30Mb, £439; 60Mb, £589
FirstChoice (0532 637988):
Atari Megafile Removable 44Mb, £799
Other Megafiles as above. ICD 40Mb, £489.Vortex 40Mb, £520
Best Prices Mail Order (0903 700714):
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£499.95p

plus VAT (Total inc. Carriage £574.95p)

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90Mb 5.25" Half-Height(badged EPSON). Access time 18ms. 1024 cylinders, 5 heads, 36 sectors. Complete with ESDI controller (16 bit), cables, & formatted. Usual price over £600. Our special limited offer price is just **£299.95** inc. VAT

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Microsoft WINDOWS 286/386	**£29.95p**

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MS Windows is required

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As Reviewed in PC-PLUS

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Measures only 16" x 16.5" x 8" (17kgs)
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SO WHO NEEDS WINDOWS 3?

Simon Walsh investigates an alternative to Windows for those who don't have the computing power to run 'the real thing'.

After coming to prominence in the home computing world by creating the two-million-selling *GeoDesk* for the Commodore 64, American company GeoWorks has, for the last three years, been turning its attentions to the PC market.

The result of this switch in markets is Ensemble, an award-winning suite of programs which aims to provide your PC with a WIMP-based front-end. And what a front-end it is! The visual effect is best described as 'soft 3D'; subtle shading defines a combination of sliders, buttons and switches which borrow heavily from Steve Jobs' NeXT machine interface in both appearance and functionality.

Ease of use is the name of the game here, and what is really remarkable about Ensemble is that it will run on any PC with a minimum of just 512K of memory. This, coupled with an open-ended design allowing for the addition of further modules to complement its built-in applications, and excellent print quality, makes the package tremendous value for money.

Essentially, it contains everything the home user or small business with standard AT or XT-type machines needs to manage and present their work.

SETTING UP

Although Ensemble is shipped with 500-plus pages of documentation, it's immediately apparent that, by and large, the manual is not really required. Installation is a simple question of typing 'setup' at the DOS prompt; everything else is taken care of automatically – assuming, of course, that you have the various system requirements on hand: an XT, AT, 386, 486 or PS/2 PC compatible, at least 512K of memory, 3Mbytes of hard disk space, a mouse, DOS 2.0 or higher and an EGA, VGA, MCGA or Hercules card driving your monitor.

Since Ensemble is primarily designed to be a front-end it's perhaps a good idea to modify your autoexec.bat file to autoload Ensemble on booting. This will be no problem if you then want to run a DOS program; on loading, you are presented with three buttons, one of which allows you to directly launch DOS batch files. The other two buttons, labelled Appliances and Professional, let you dispense with the dreary old command line interface forever.

BASIC ESSENTIALS

The manual somewhat simplistically refers to the bundled Appliances as the equivalent of a toaster; small, simple and basic. Although the Planner, GeoDex, Banner, Calculator, Notepad and Solitaire modules accessible from the Appliances section also appear in the Professional workspace, in Appliances mode they don't include additional buttons, scroll bars and pull-down menus. We're talking idiot-proof mini-applications here.

The two Appliances most worthy of note are Geodex, an Address book, and Banner, a large-scale print application; although basic, both show the tremendous ease and flexibility of the system.

GeoDex is more like a Macintosh *HyperCard* stack than a conventional PC program, with small buttons enabling you to quickly create and locate names and addresses and automatically dial corresponding phone numbers (if you have a modem hooked up).

Banner is a simple-to-use printing utility which will output text sideways on to continuous paper at a size of one character per page. Although programs like this have been around for a while now, this one is about the best available – various modifications to the text such as emboldening, italicising and shadowing can all be brought in from a pull-down font menu. And if you assume that the eventual print quality of these embellishments might leave a lot to be desired, you couldn't be more wrong; the output is fantastic, even on a 9-pin dot matrix printer.

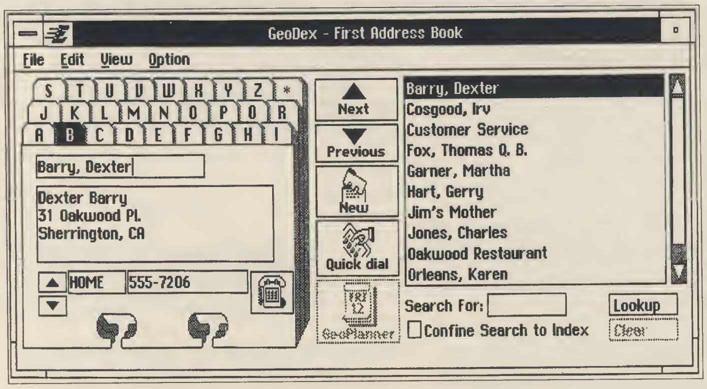
This is because Ensemble uses outline fonts to define the shape of characters both on screen and in print. The result is fast screen updates and extremely precise printed output.

PROFESSIONAL WORKSPACE

Although the Appliances are impressive, the heart of Ensemble lies behind the Professional Workspace button. This reveals the GeoManager icon desktop, with its 10 sub-applications. Any of these can be launched by double-clicking on their icons, and can be made to multitask with each other in their own separate windows – which can be resized using scroll bars or moved around by holding down the mouse button while in the title bar area.

Clicking on the icons representing different drives in the information area produces iconic or textual representations of all the folders and files on your entire machine.

Ensemble follows a Mac-style interface, in that any document relating to a program residing elsewhere on disk can be launched directly by simply double-clicking on it – saving you the trouble of finding the program itself and launching that, then opening the relevant document. Moreover, an 'overlapping' icon allows you to view several window directories simultaneously within the larger GeoManager window.



Barry, Dexter

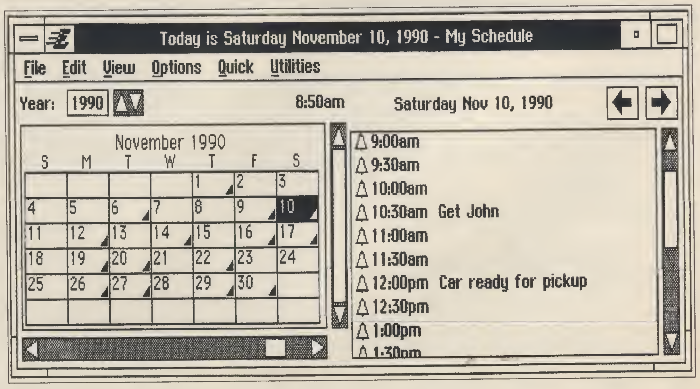
Dexter Barry
31 Oakwood Pl.
Sherrington, CA

HOME 555-7206

Barry, Dexter
Cosgood, Irv
Customer Service
Fox, Thomas Q. B.
Garner, Martha
Hart, Gerry
Jim's Mother
Jones, Charles
Oakwood Restaurant
Orleans, Karen

Search For:

• *Geodex is much better than the Address Book Appliance – it gives you lots of extra features. You can print all the names and addresses in the file on your printer.*



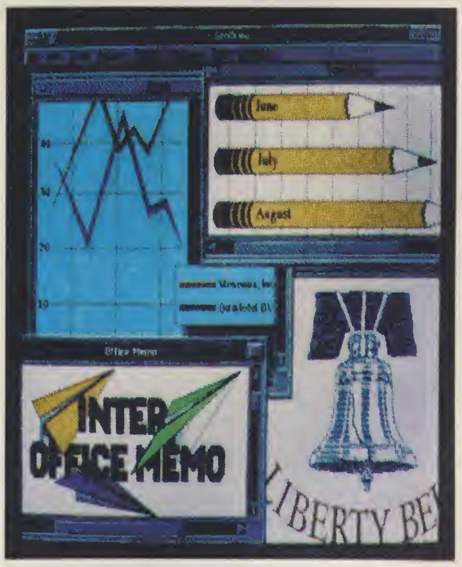
Year: 1990 8:50am Saturday Nov 10, 1990

November 1990

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

9:00am
9:30am
10:00am
10:30am Get John
11:00am
11:30am
12:00pm Car ready for pickup
12:30pm
1:00pm
1:30pm

• *GeoPlanner is a combination of desk calendar and appointment book. It's a good place to write things you don't want to forget.*



• **GeoDraw** ***in action - it can import scanned images too***

The upper area of the screen contains buttons to open, close and expand windows to full screen size and to call up the Express Menu – an essential shortcut which lets you switch from one application to another, start a new application, return to the Welcome screen or return to DOS. Also up top are the pull-down menus – File, Tree, View, Options, Disk and Window.

These file management and viewing functions are probably the areas where Ensemble is most likely to be compared to Windows 3 – and there's no escaping the fact that there are remarkable similarities. The difference lies in the added value supplied by Ensemble's bundled Appliances and the consistent menu iteming they share.

These consistent menus are present throughout all the sub-applications included in Ensemble, although individual items within menu ladders will alter depending on the parent program. It is certainly the case that consistent key combinations and positioning of items makes the interface begin to seem to be pretty intuitive after a few hours' use.

As any Mac user will tell you, the fact that all Mac programs have a consistent orthodoxy in the way they behave and are presented makes that machine one of the most enjoyable to work on. With Ensemble, Geoworks has set out to do just the same.

THE PROGRAM SUITE

The main programs available in Ensemble are the *GeoWrite* word processor and *GeoDraw* paint package, together with *GeoComm*, a fully-functioning telecommunications package with auto-dialling and sequencing scripts. But smaller applications are also present; functional utilities existing as memory resident programs or desktop accessories which can be called up at any time.

The calculator, notepad, scrapbook and planner can all be used to store diverse information which can then be transferred into the other applications. Thus, for instance, it's possible to quickly paste name and address information from *GeoDex* into *GeoWrite*, or exchange pictures between *GeoDraw* and *GeoWrite* via the scrapbook.

Another useful utility is called Preferences, which offers the user options to alter screen, mouse and printer device options. A spreadsheet and database are in the pipeline and should be available later this year.

Aside from the well-designed front-end and the useful memory-resident utilities, each of which in themselves make Ensemble worth having, are the main packages on offer; *GeoWrite* and *GeoDraw*.

First of all, it's important to say that the two applications are extremely similar in terms of menu design and one can easily cut and paste material between the two. While *GeoWrite* is primarily intended to offer text editing facilities, it also supports many design and layout functions within the package. Similarly *GeoDraw*, while primarily intended to offer design and layout features, also offers text editing functions.

With 20 fonts and several different typestyles, *GeoWrite* is obviously more than a standard text editor. Instead it's more of a word processor along the lines of, say, Microsoft *Word* for the Mac, where all a user has to do is highlight text with the mouse before selecting the size, font and type style required; the results are immediately displayed on-screen. The screen can also be expanded or contracted in size to suit your own viewing needs.

Besides this, though, the module also offers a number of features normally only found in DTP packages. Facilities, for example, to produce white-on-black reversed-out type, custom design borders surrounding text, background, border and text halftones and multi-column formatting are all present in the package.

Perhaps the most innovative feature of *GeoWrite* is its colour support, however; text and border areas can be set to one of 16 preset colours or one of 255 individual RGB settings. Finally, graphic elements can be imported from *GeoDraw*.

The *GeoDraw* module is also a very advanced piece of software, with object-oriented graphic elements allowing accurate changes of size and proportion with no loss in resolution or definition. Graduated fills and halftones can be added to discrete objects, whether they be polygons, lines or text characters.

Again, the full palette of colours is available (although the actual range of colours depends on your graphics card). Text manipulation is also straightforward and extremely fast, given the system's employment of outline fonts. As such, text can be rotated and flipped very quickly.

Used in combination, *GeoWrite* and *GeoDraw* provide immense possibilities; even the humblest XT with 512K of memory is capable of handling graphics and text as if it were a 386 with several Megs of RAM.

WORTHY OF INVESTIGATION?

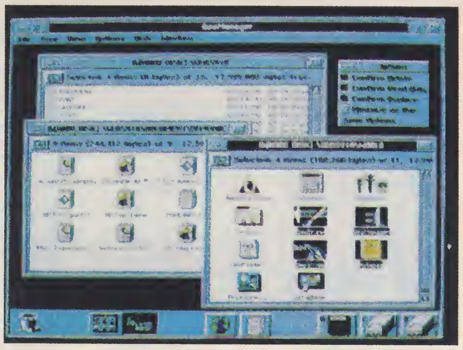
So, is Ensemble worth a look? As far as I'm concerned, the answer is a resounding yes. GeoWorks has spent three years working on the package and, after looking hard at the Macintosh, Windows, NeXT and OS/2 interfaces, the company thinks it has come up with something rather special. To all intents and purposes it has – Windows 3 notwithstanding.

Perhaps Ensemble's only flaw is its bad timing; had the product made it to the market a year earlier, then perhaps we would now see it as the central player in the new generation of PC user-friendliness. As it is, the ground has been stolen, Microsoft is firmly entrenched and, despite the package's credible advantages, one can't help but feel that in the long run, it's doomed.

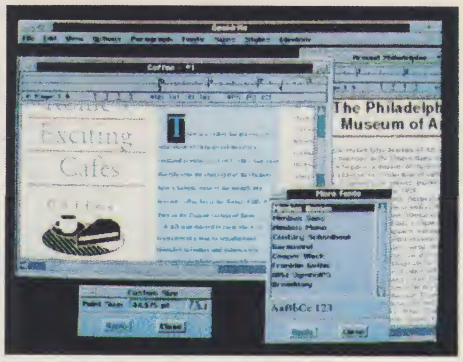
But then, 80 per cent of the PC market consists of 086 and 286 machines with 640K of memory and nothing more. Flashy 386 boxes with extended memory are in the minority, so GeoWorks is, rightly, aiming its product at the majority of PC users.

With Ensemble, you don't need Windows and you certainly don't need to upgrade just so you can draw on the benefits of using a graphical interface. If you want all that a WIMP interface can offer and more besides, take a long, hard look at Ensemble; you may well find that it fits the bill. ■

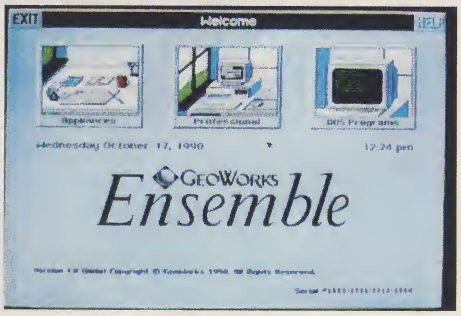
GeoWorks' Ensemble is available for £149 from GSI Republishing on 081-995 4500.



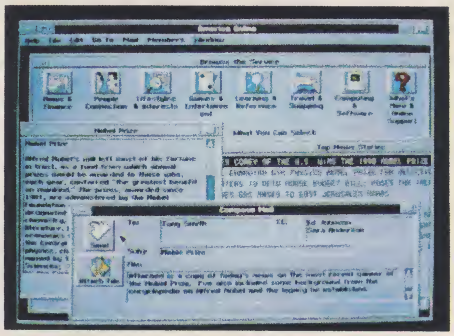
• ***GeoManager's icon driven front-end makes for easy file management.***



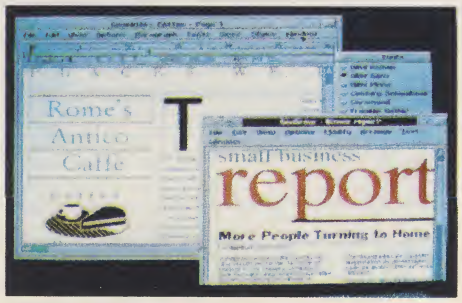
• ***The GeoWrite word processor also supports pictures and DTP elements.***



• ***Ensemble's Welcome screen.***



• ***The built-in comms package also supports multi-windowing.***



• ***With outline fonts it's possible to quickly resize text***

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All of the prizes in the competitions we run come direct from the distribution companies themselves. If you haven't received your prize within a month of the cover date of this issue, yell at them, not us.

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There were 40 **Dial Code Breakers** to win from Sector Software (0772 452414). We've drawn the first 20 (the other 20 will be announced in a few weeks) and they are: Brian Ross, R Beaconwell, S Stinson, P Wallace, E R Burns, Paul Boocock, Jim Comrie, S R Fincham, Ally Hill, R P Sharman, Edward Mc Laughlan, A Hylton, Steve Pepper, Eugene Morgan, J Wilson, Colin Mackay, N Prescott, KW Birks, Roger Philips, RF Gay.

Next came a couple of copies of the delightful Amiga DTP package, ***Pagestream 2***. These are available from Silica Shop on 081-309 1111 and will be winging their way to the Amigas of M Jones and AH Foster.

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Last, but not least the Down to Earth with a Bang Compo offered copies of ***Air Traffic Control Simulator Tower FRA*** to 20 of you: Michael Barton, Maynard Wilson, Graham Dobson, Stephen Wakefield, TS Whaite, Steve Carter, Nick Taylor, Allan Ogilvie, I Timson, Peter Gunning, MJ Humphrey, D Winder, Dave Brown, MJ Bull, Andrew More, Mrs S Matheson, Simon Taylor, Trevor Cobbe, W Stones-Clare, Philllip Capstick.

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TOTAL RRP:	£258.80
SAVING:	£110.45
SILICA PRICE:	£148.35

£129
+VAT = £148.35

---

144 CPS DRAFT 24 PIN

The Citizen 124D Printer

CITIZEN 124D

The award winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- *24-pin Impact Printer*
- *Print Speed 144cps Draft*
- *2 LQ Fonts (48cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *Superior Graphics - 360×360dpi*
- *FREE Starter Kit*

RRP	£320.85
STARTER KIT	£29.95
TOTAL RRP:	£350.80
SAVING:	£144.95
SILICA PRICE:	£205.85

£179
+VAT = £205.85

---

192 CPS DRAFT 9 PIN

Swift 9 Colour Printer

SWIFT 9 - COLOUR!

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturer's 24-pin models.

- *9-pin Impact Printer*
- *Print Speed 192cps Draft*
- *3 NLQ Fonts (48cps)*
- *8K Buffer*
- *Epson & IBM Graphics Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

FREE! COLOUR KIT

RRP	£309.35
STARTER KIT	£29.95
COLOUR KIT	£39.95
TOTAL RRP:	£379.25
SAVING:	£161.90
SILICA PRICE:	£217.35

£189
+VAT = £217.35

---

192 CPS DRAFT 24 PIN

Swift 24 Colour Printer

SWIFT 24 - COLOUR!

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1990. Its rapid print speed, quality and black or colour options, make it a natural choice.

- *24-pin Impact Printer*
- *Print Speed 192cps Draft*
- *4 NLQ Fonts (64cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

FREE! COLOUR KIT

RRP	£419.75
STARTER KIT	£29.95
COLOUR KIT	£39.95
TOTAL RRP:	£489.65
SAVING:	£191.80
SILICA PRICE:	£297.85

£259
+VAT=£297.85

PRINTER ACCESSORIES

SHEET FEEDERS		
PRA 1200	**120D**	**£74.75**
PRA 1215	**124D/Swift 9/24**	**£96.60**
PRA 1228	**124D/Swift 9/24**	**£46.00**
SERIAL INTERFACES		
PRA 1189	**120D+**	**£62.10**
PRA 1209	**Swift 9/124D**	**£34.50**
PRA 1709	**Swift 24**	**£28.75**
PRINTER STAND		
PRA 1242	**124D/Swift 9/24**	**£26.95**
ORIGINAL RIBBONS		
RIB 3502	**120D/Swift 9 Black**	**£4.03**
RIB 3924	**124D/Swift 24 Black**	**£5.18**
RIB 3936	**Swift 9/24 Colour**	**£17.25**
COLOUR KITS		
PRA 1236	**Swift 9/24**	**£39.95**

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Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately, FREE OF CHARGE!

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- ***3½" Disk with Drivers for Microsoft Windows 3***
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- ***200 Sheets of High Quality Continuous Paper***
- ***200 Continuous Address Labels on Tractor Feed***
- ***5 Continuous Envelopes on Tractor Feed***

If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref: KIT 5000) for the special Silica price of £24.95 - £5 off RRP!

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200 SHEETS PRINTER PACK
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Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is one of the UKs leading independent computer dealers and provides a quality service to users at home, in education and in business throughout the nation. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature on the Citizen printer range and begin to experience the "Silica Systems Service".

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Opening Hours:	Mon-Sat 9.30am-6.00pm		No Late Night Opening	Fax No: 071-323 4737
LONDON SHOP:		Selfridges (1st Floor), Oxford Street, London, W1A 1AB		**Tel: 071-629 1234**
Opening Hours:	Mon-Sat 9.30am-6.00pm		Late Night: Thursday until 8pm	Extension: 3914
SIDCUP SHOP:		1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-302 8811**
Opening Hours:	Mon-Sat 9.00am-5.30pm		Late Night: Friday until 7pm	Fax No: 081-309 0017

To: Silica Systems, Dept NCE 0491-54, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Mrs/Ms: .... Initials: .... Surname: ....

Address: ....

....

.... Postcode: ....

Tel (Home): .... Tel (Work): ....

Company Name (if applicable): ....

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Software, Instructions, Artwork and Packaging ©1990 Domark Software Ltd.
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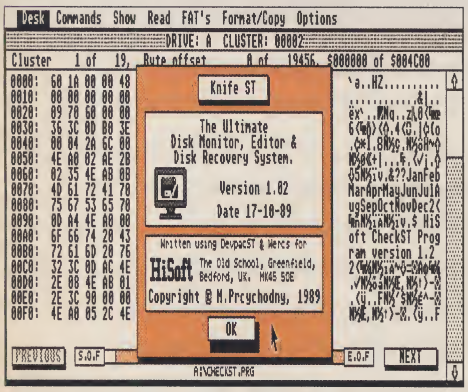


Desk Commands Show Read FAT's Format/Copy Options
PREVIOUS
S.O.F
E.O.F
NEXT
OK

```
DRIVE: A  CLUSTER: 00002
Cluster    1 of   19,  Byte offset     0 of  19456, $000000 of $004C00
0000:  60 1A 00 00 48
0010:  00 00 00 00 00
0020:  09 70 60 00 00
0030:  36 3C 0D B0 3E
0040:  00 04 2A 6C 00
0050:  4E A0 02 AE 2B
0060:  02 35 4E AB 0B
0070:  4D 61 72 41 70
0080:  75 67 53 65 70
0090:  0D A4 4E A0 00
00A0:  6F 66 74 20 43
00B0:  72 61 6D 20 76
00C0:  32 3C 0D AC 4E
00D0:  2E 08 4E AB 01
00E0:  2E 3C 90 00 00
00F0:  4E A0 05 2C 4E
A:\CHECKST.PRG
```

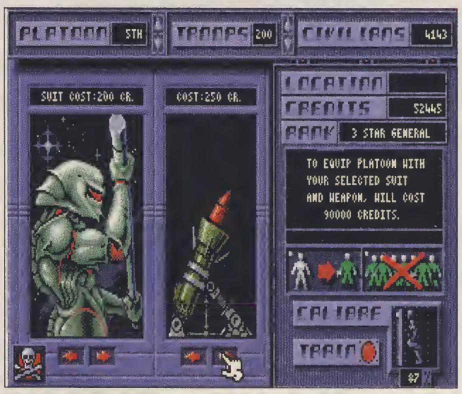
Knife ST

The Ultimate
Disk Monitor, Editor &
Disk Recovery System.

Version 1.02
Date 17-10-89

Written using DevpacST & Wercs for
HiSoft The Old School, Greenfield,
Bedford, UK. MK45 5DE
Copyright © M.Prcychodny, 1989

BEST SOFTWARE



PLATOON 5TH
TROOPS 200
CIVILIANS 4143
SUIT COST:200 CR.
COST:250 CR.
LOCATION
CREDITS 52445
RANK 3 STAR GENERAL
CALIBRE
TRAIN
87

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The ST is just the

*The **Atari ST** is the perfect introduction to the world of computing. The power of the ST allows you to run "serious" applications as well as playing games, and the ST system is flexible enough to allow you to expand as you develop your interests and expertise in different applications.*

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*If you thought that computers were all about playing games you've been missing out on the real potential that you and your computer have. To find out more about either the **Atari ST** or peripherals for any applications simply fill in the coupon and send it to Atari at the address below.*

Please send me more details about the Atari ST and other products.

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Atari Corp UK Ltd, Atari House, Railway Terrace, Slough SL2 5BZ

ATARI
HyperChart
Presentation Graphics System for all Atari Mega and ST computers
ATARI SC1224
1
Superbase
PROFESSIONAL
DATABASE MANAGEMENT SYSTEMS
2
CAD-3D 2.0
CYBERMATE
Simulate reality, bring your fantasy to life with this two program set
6
M-ROS
Cubase
7

1. **Hyperchart** – Atari: A complete business graphics package allowing output to overhead, Laser printer or 35mm slide.
2. **Superbase** – Precision software: Excellent database package offering full facilities and support, with complete programming abilities.
3. **1st Word Plus** – GST Software: The standard Word processing package for the ST, offers great ease of use and excellent WP facilities.
4. **LDW Power** – Atari: The best Spreadsheet

The ATARI ST —

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1ST WORD PLUS
The Standard ST Word Processor
3
ATARI
LDW POWER
SPREADSHEET
DEVELOPED FOR YOU BY LOGICAL DESIGN
4
PageStream
5
REPLAY VIII
SOUND SAMPLER
8
QUARTET
THE DIGITAL MUSIC MACHINE
9
P.F.M PLUS
PERSONAL FINANCE MANAGER
HOME FINANCE PROGRAM BY PETER VEALE
10
ATARI SC1224

available for the ST. Lotus 1-2-3-compatible, fast and easy to use, but very powerful.

⑤ **Pagestream** – Softlogic: Desktop publishing package that is ideal for beginners and experts alike, full Gem utilisation.

⑥ **Cyber Studio** –: The Cyber series offers a complete art, design and animation package, with full CAD facilities.

⑦ **Cubase** – Steinberg: A full sequencing package with an excellent array of features. A complete music studio in your ST.

⑧ **Replay VIII** – Microdeal: The latest edition of the standard ST sound sampler, easy sampling of sound to use in your programs and sequences.

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⑩ **Personal Finance Manager** –Microdeal: Control your finances the easy way, many many functions, excellent graphing facilities.

More than just great games

WELCOME

The *New Computer Express* Atari ST Guide is aimed at you. Whether you already own an ST or are thinking of buying one in the future, you should be reading everything that follows.

We have included easy to read guides to the very best in software, hardware add-ons and games for the ST. There is no cutting through dead wood in order to pick the product which will serve your needs; if it's in here then it's worth having. We guarantee it.

If you are thinking of buying an ST but don't know which machine in the range to go for, or which package in the shops is right for you, then read the full rundown of all the STs - and more - on pages 18 and 19.

Finally, do you feel lucky? If so, you should get your thinking head on, and turn to page 22 where you get the chance to win Atari's latest STE 1040 package.

Good luck, and good reading.

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The Atari ST Guide is a supplement to *New Computer Express* and is not to be sold separately.

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CONTENTS

The Hardest Software

There's everday software, and then there's essential software.

We short list the very best non-games software for you

– Pages 6 and 20

Peripheral Visions

Add more life and extra power to your ST with the 'highly recommended' hardware add-ons listed here. We take expert advice and give it to you.

– Pages 9 & 10

EXPLOSIVES

The Greatest Games?

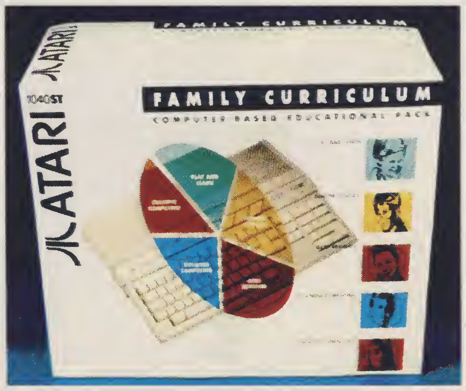
Okay, so we know that that the ST can do more than "just play games", but that shouldn't stop you enjoying yourself. A guide to the best in ST fun...

– Pages 12, 13, 14

Atari Talking

Peter Staddon is the man who is trying to change the way we look at the ST. Find out what he has to say about new launches, old foes, Apple Macintosh and the future of the STFM.

– Pages 16&17



WIN! WIN! WIN!

Yes, it's your chance to win the latest STE 1040 package from Atari. Now selling in the shops for £399, you could have it for nothing.

– Page 22

NEW LOW PRICES FROM BCS

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500	3½ DS/DD	£135
1000		£CALL

Price incl. VAT & P&P

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Sony Branded
Boxed 20
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Add £3.50 P&P, add £4.00 for 3 day delivery, add £7.50 2 day, £9.00 next day (from despatch)
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Access

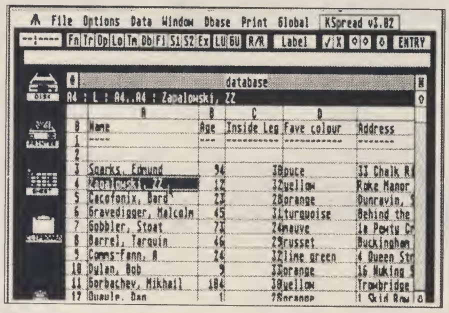
VISA

HARD SOFTWARE

What's the best in ST software? Alex Soboslay makes his first set of nominations and awards in the following categories: Spreadsheets, Databases, Comms, and desktop publishing. Read on for the winners.

SPREADSHEETS

K-Spread
v3 £89.95, v4 £129.95
Silica
Tel: 081 309 1111

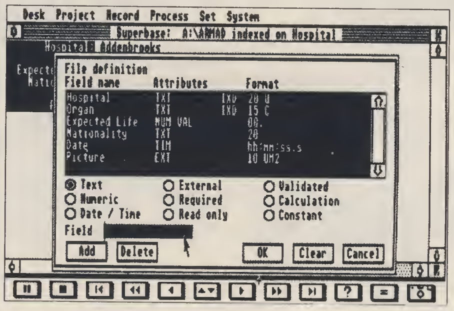

File Options Data Window Dbase Print Global KSpread v3.02
Fn Tr Op Lo Tm Db Fi S1 S2 Ex LU GU R/R Label ✓ X ENTRY
database
A4 : L : A4..A4 : Zapalowski, ZZ

	A	B	C	D	
0	Name	Age	Inside Leg	Fave colour	Address
1	----	---	----------	-----------	-------
2					
3	Sparks, Edmund	94	30	puce	33 Chalk R
4	Zapalowski, ZZ	12	32	yellow	Roke Manor
5	Cacofonix, Bard	23	28	orange	Dunravin,
6	Gravedigger, Malcolm	45	31	turquoise	Behind the
7	Gobbler, Stoat	73	24	mauve	1a Perty Cr
8	Barrel, Tarquin	46	29	russet	Buckingham
9	Comms-Fann, A	24	32	lime green	4 Queen Str
10	Dylan, Bob	9	33	orange	16 Nuking
11	Gorbachev, Mikhail	104	30	yellow	Trowbridge
12	Quayle, Dan	1	28	orange	1 Skid Row

This comprehensive GEM-based spreadsheet from Kuma loads and saves *Lotus*, .WKS, .WK1, *Symphony*, ASCII and DIF files, ensuring compatibility with your office system and easy portability of data. It even uses *Lotus*-style commands, via menus at the top of the screen plus a good range of keyboard equivalents, which can be faster. Version 3 requires only 512K and includes macros, stats and trig calculations and conditionals, as well as database, financial and time/date calculations. What's more, there is an impressive range of user-defined functions, find/replace database facilities and friendly mouse-driven block copy commands. Calculations are very fast, but the system lacks 'double recalculation' – that is, it doesn't automatically make two passes to incorporate updated data into earlier cells which may depend on later cells. The window includes familiar icons like a trashcan, clipboard and printer – which makes it exceptionally easy to use, but means that the display is limited to 13 rows by 7 columns initially. However, the width as well as the height of cells is adjustable. Version 4 adds graphs and GDOS output; it boasts over 200 functions, including everything version 3 does, but requires 1Mb.

DATABASES

Superbase Personal 2
£99.95
Precision Software
Tel: 081 330 7166.


Desk Project Record Process Set System
Superbase: A:\ARMAD indexed on Hospital
Hospital Addenbrooks
Expecte
Natio

File definition

Field name	Attributes		Format
Hospital	TXT	IXD	20 U
Organ	TXT	IXD	15 C
Expected Life	NUM VAL		00.
Nationality	TXT		20
Date	TIM		hh:mm:ss.s
Picture	EXT		10 UM2

● Text ○ External ○ Validated
○ Numeric ○ Required ○ Calculation
○ Date / Time ○ Read only ○ Constant

Field
Add
Delete
OK
Clear
Cancel

Superbase is a fully relational database, meaning it is able to draw on linked items from different files, but despite its power it is fast and easy to use. It offers you a friendly GEM-based environment with VCR-style keys along the bottom of the screen display, making it very intuitive and simple to operate – and there are extensive tutorials in the manual to ease the beginner into it. It boasts full windowing, menu and mouse control for fast data manipulation, and ASCII import and export. What's more, it includes a straightforward mini-WP text editor with integral mailmerge facility and the capability of dedicated label printing. Well thought out features include automatic record numbering, multiple fields, inclusion of constants and the option of designating files read-only to reduce the chances of accidentally erasing data. Batch files options speed up entry of data, and the program can search for and display external text files. What's really distinctive is its unique text and picture storage for all types of library application – you can actually include graphics in data. There is also a comms function, so you can send text or database files to another computer via modem or serial cable. The program includes extensive data validation options, applicable across multiple files, and it can be set to display help messages if you enter invalid data.

COMMS

Vanterm/Uniterm
£3 each
Softville PD library
Tel: 0705 266509.

No contest here: the best Comms software is Public Domain. *Vanterm* has a slight edge in user-friendliness and doesn't require any technical comms knowledge to make the best of it. It's a complete terminal program featuring support for Xmodem and Ymodem (fast data transfer protocols, used for sending data downline quickly and minimising on-line time). It's fully GEM-based, which means that it is easy to use, and it comes with documentation on disk and a help facility in the program.

Uniterm is feature-packed but hard to use without some knowledge, though the program does come with a text file including 50 pages of help. It includes an auto-dial option and a telephone book function to record frequently-used numbers. It supports Xmodem, Ymodem, Kermit and ASCII protocols, and it also has the ability to execute other programs from within the *Uniterm* shell. This means that you can call up a Zmodem download program if you have access to one. All in all, it's not bad value for three quid! ■

DESKTOP PUBLISHING

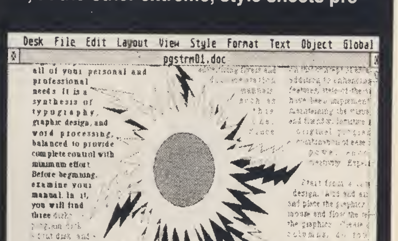
PageStream.
£149.95
Silica
Tel: 081 309 1111

A powerful but remarkably easy-to-use DTP package, featuring an extensive menu bar layout and comprehensive toolbox – including text column object, picture reshaping icons and a comprehensive set of drawing tools with facilities for arcs and elliptic arcs.

Text and graphics importing are very good, with graphics handling particularly comprehensive: PageStream supports IMG scanned images as well as the usual art package formats, IFF, TNY, NEO, Degas (including compressed), and others, and text can be made to run around the most complex of images. Colours are limited only by your screen mode, and colour separation is supported. Variable zoom can magnify a selected area up to 1,500 per cent of actual size – and sizes can go up to 1310 points!

The program uses an outline font system for printing and generating screen display – which can be slower, but results are exceptional and genuinely WYSIWYG. Another advantage of the system is that you can customise existing fonts almost without limit. Or, at the other extreme, style sheets pre-defining text style information can be saved and applied with a keystroke.

The latest version, v183, improves the speed of on-screen display and adds PostScript printer support as well as dot-matrix. In all, a large variety of printer drivers is included, colour and industrial strength Linotronic machines among them. A dazzling range of features, all surprisingly accessible. ■



all of your personal and professional needs. It is a synthesis of typography, graphic design, and word processing, balanced to provide complete control with minimum effort. Before beginning, examine your manual. In it, you will find three

Are you looking for a new start in life?
Or looking to improve what you already have?

Maybe Network can help..........

Network's PROXIMA dtp program is generally recognised by professional printers, publishers and graphics designers as the best dtp software available for the Atari ST. ST Apps. readers will have seen our professional-user listing in the January issue, so we won't repeat it here. Suffice it to say that Network simply doesn't just stop at selling you the software and leaving you to sink or swim.

For a start. our firm has been engaged in printing and publishing everything from newspapers and magazines, down to business cards, for forty years. Since DTP is *supposed* to be about printing and publishing, perhaps you'll agree that it makes sense, when considering your own dtp requirements, to place your faith in the ONLY printer/publisher in the UK actively supporting dtp hard and soft-ware.

For a start, we NEVER market nor support ANYTHING which we haven't used in PROFESSIONAL circumstances to our own lasting satisfaction. *That's why although we can supply certain well-known brands of hard and soft-ware off the shelf, at very favourable prices, we don't.....at least not without giving customers a "warts-and-all" breakdown of the product.* This way we KNOW we can have faith in what we are offering to the public. If and when better products come along, and WE are satisfied with them, then we'll get them to you at the best possible prices.

Apart from pride, one reason we have to try to get things right at the outset is that ALL our products are supported by a nationwide "forever" free help line. This runs till about eleven P.M. EVERY day, including week-ends. Our own business has always operated on a 24 hr. basis and we know from experience that the time things start to go wrong is just after everyone else has shut down for the day...or the week-end. *We ensure that doesn't happen to Network customers.*

Of course it costs an arm and a leg: if we sell you PROXIMA software at £135 plus VAT and you phone in with just one query, our margins are so tight that the profit on that sale has gone. Yet Network customers know that they can get free help, at any time, not just on the software they're using, but on the actual job they're trying to do with it. Sometimes this can involve phone calls stretching into hours as they go away and come back again. We don't care: the system has made us many, many new friends and we believe that they will stick with us as they expand their businesses or whatever.

Atari Products

The fact that you are reading this magazine shows you are an Atari devotee. So are we. We believe even the basic 1040 is an excellent business machine....in fact it forms the heart of our Proxima dtp package.

We are Atari dealers. And we support all Atari products, so if your hardware goes down after hours, at least you can get things moving with us, AT ANY TIME up till 11 p.m. Often we can put things right with telephone advice.

We can't match "box-shifter" prices.....but *they* can't match our service. Furthermore, we give 10% off ALL Atari prices and even more off some selected items of hard and soft-ware. Each one of our network of advisors is an Atari expert, able to advise you on all aspects of Atari usage. *You may not think that's important while you're making up your mind to buy....but just wait till you've got the machine up and running and want to find your way round GEM and TOS. And wait till that happens at nine o'clock of an evening!*

At Network, service and quality are the name of the game.

Change Of Life

There are people all over the UK, and some abroad, who now know that for a very minimal outlay indeed, they can engage in a complete change of career....or establish a very satisfactory secondary income. They are people who have bought what we call our "Beyond Proxima" package. What this boils down to is setting you up as a PROFESSIONAL offset litho printer, usually working from home, though some people have expanded into shop premises. *If you're interested, we'll put you in touch with them.*

This scheme has all the benefits of a franchise scheme without the setbacks and ongoing financial commitment. Your TOTAL outlay can be under £5000. For that sum, you get what amounts to a complete *professional* print-shop, just as comprehensively equipped as the High-st. instant print shops (most of whom pay £30--50,000 for the chance, plus a forever percentage-of-=turnover commitment).

In the eighteen months this scheme has been running, with NOT ONE participant having any prior printing knowledge whatsoever, we've only turned up one deadbeat (two brothers who fell out with each other!). One retired traffic warden, working from home, turned over £15,000 in four months' working, on her own, in her living-room. Such figures aren't exceptional. If you want to know more...write and ask.

Whoops! What's this doing in an Atari mag.?

We all went for Atari for its computing power, speed and cheapness. But that isn't the ONLY way to go, now.

Network has an American subsidiary and is importing direct from them extremely fast, powerful PC compatibles at astonishing values.

Our full 386 (NOT the SX!) comes with EIGHT mb of memory; eight expansion slots; 25 mhz clock speed (Landmark speed 32 mhz); 40 mb hard drive; choice of floppy drives or both; full 102 key keyboard; super colour VGA card with 14" colour monitor. The machine is called our PROXI-MAX 3. The price? A derisory £1500 plus VAT. For £2500 we'll bundle with the 386 the most powerful dtp software on earth: PageMaker, Windows, MSDOS and Corel Draw. If you comparison-shop, you'll know just what kind of bargain we're offering. PROXI-MAX 1 and PROXI-MAX 2 are 286 machines, 16 mhz, with similar spec. 1 is £1045, 2, a tower system, is £1095, all plus VAT. All systems can be customised. All are warranted for one year, unconditionally, and all servicing is effected in the UK within 24 hrs.

Getting into print

NETWORK can help you better than most when it comes to out-putting your work. We handle Epson and NEC dot matrix printers, but specialise in lasers--necessary for top quality.

SHARP—2 mb memory, five emulations. only £1095.

HP LASERJET 111--includes simulated 600 dpi, only £1125.

HP LJ 111 ***plus*** extra memory ***plus*** PostScript--only £1500.

SHARP POSTSCRIPT- fast, 35 PS fonts, only £1500.

PROFESSIONAL LASER- 800 x 800 dpi (seven times normal resolution). ONE HUNDRED and THIRTY-FIVE FONTS!, super fast download, only £2350. *All above prices are plus VAT and are at least £400 LESS than rrp.*

INFORMATION AVAILABLE FROM:

NETWORK NEWS SERVICES Dock-rd. Tilbury, Essex
PHONE: 0375:859103 FAX 0375:856108

Ladbroke Computing International

Hard Drives

- ☐ Autoparking 3.5" mechanisms.
- ☐ Full metal case suitable as monitor stand.
- ☐ On/off button and DMA device selector mounted on front.
- ☐ Integral PSU.
- ☐ DMA Out port for daisy chaining.
- ☐ Megadrive controller, low power, controls up to 8 SCSI drives.
- ☐ Compatible with emulators such as Spectre GCR, AT Once.
- ☐ Up to 255 partitions, up to 1 Gigabyte in size.
- ☐ Selection of Accessories/boot partition with boot editor.
- ☐ Includes backup software and Midistudio demo software.

Price Breakthrough

We can now offer a range of hard drives all built around cached Quantum mechanisms with an 11ms average access time for the incredible prices shown below. QUANTUM mechanisms are used which are of the highest quality. These Quantum mechanisms are built to American military standard and include a 2 year manufacturers warranty (from date of manufacture) offering the best possible protection for your data.

52Mb 11ms (Quantum drive)	£ 419.99
105Mb 11ms (Quantum drive)	£ 529.99

Add £20 for HD with ICD board(includes clock). Phone for other capacities.

CUMANA 3.5" Drives

CSA 354: ST 3.5" drive.	*£69.99*
CAX 354: Amiga 3.5" drive.	*£59.99*
ST Internal drive upgrade.	*£54.99*

The ST internal drive requires the ST's case to be modified (full instructions supplied). The external ST drive is a high quality, slim, quiet drive which comes complete with integral PSU and so does not draw power from the ST which could cause problems. Add £3 P&P for drives.

Quality Disks

	Bulk Sony or Kao		TDK Brand
Quantity	Loose	Boxed	Boxed in 10's
10	£ 5.99	£ 6.99 Includes x10 Ryford black plastic box	£ 9.49
40	£ 20.99	£ 26.99 Includes x40 Lockable, disc box	£ 34.99
100	£ 48.99	£ 57.99 Includes x100 Lockable, disc box	£ 84.99
150	£ 66.99	£ 83.99 Includes x150 Posso Stackable disc box	£ 125.99

All disks carry unconditional guarantee. Add 80p P&P for each 10 disks or £3.00 for 100 and above.

ST & Amiga Packs

520STFM Discovery Pack	£279.99	520STE Turbo Pack	£349.99
1Mb STE Turbo Pack	£369.99	2Mb STE Turbo Pack	£409.99
4Mb STE Turbo Pack	£479.99	(ST) Tenstar pack, M/mat, J/stick	£30
Amiga 500 Screen Gem's Pack	£369.99	Amiga 500 Computer	£329.99

A4 Scanner

- ☐ 200 Dpi scanner.
- ☐ 16 grey scales or Black/White mode.
- ☐ High quality thermal image printer.
- ☐ Acts as photocopier.
- ☐ ST & Amiga £449.99
- ☐ PC version £479.99. Requires 1Mb RAM.

IMG scanner still available at an incredible £49.99

Monitors

Atari SM124 Mono	£ 109.99
Philips 8833MkII Colour	£ 249.99
Philips 15" TV	£ 269.99

Includes: FST, remote control, Scart input (giving near monitor quality display), 60 tuner presets, sleep timer and Fastext.

All displays come with Scart cable. Deduct £10 from Monitors only, if bought with computer.

Please Read: Terms of Sale.

We are the longest established Atari dealer in the U.K. We have developed an extensive customer service policy which means that we test all Hardware/Software prior to despatch to ensure that goods arrive in working order. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. This isn't just our opinion, we were voted "Best Dealer 1989" by the readers of ST World magazine, not for "the number of boxes shifted", but for quality service.

On Site Warranty: We have recently extended our backup programme by offering on site warranty as an option on all ST's. We already offer this service on, All Star printers and Philips monitors listed.

All prices are correct at copy date 21/03/91, and are subject to change without prior notice. All prices are accurate while stocks last. Phone for up to date prices. All prices include VAT, there are no hidden extras (WYSIWYG). Delivery (in Mainland U.K) is free, on orders over £100 (add £10 for next day courier delivery. All prices available on Mail Order. Shop prices may differ.

Midistudio Master

- ☐ 100 tracks storage, 20 tracks playing simultaneously.
- ☐ 240 ppq resolution.
- ☐ Realtime mix-down via mouse.
- ☐ Realtime scrolling arrange window.
- ☐ 11 levels of quantise, including humanise.
- ☐ Pipeline/Module system.
- ☐ Loop record.
- ☐ Midi soft keys.
- ☐ Works on 1040STF(M)(E)

Midistudio Master £129.99

Midistudio Junior still available £49.99

Phone for upgrades

FAX/Modem

Use your ST or Amiga to send faxes. Fully featured modem accesses bulletin boards/commercial systems.

- ☐ Fully Hayes compatible.
- ☐ Auto dial/answer
- ☐ 300/1200/2400 Baud
- ☐ For ST or Amiga
- ☐ Cannot receive faxes. Not BT approved.

£200

PC's

AT 12Mhz Desktop	£ 449.99
AT 16Mhz Desktop	£ 499.99
AT 16Mhz VGA Mini tower 40Mb	£ 849.99
386SX Mini tower	£ 699.99
386-25 VGA Mini tower	£ 1194.50
Mono Monitor	£ 99.99
VGA Colour Monitor	£ 299.99
PC Emulators for ST	
PC Speed, XT Emulator	£ 99.99
AT Speed, AT Emulator	£ 189.99
AT Once, AT Emulator	£ 199.99

New Prices Upgrades

512K STFM, 16 or 4 chip kit.	£ 39.99	512K ST board+chips, kit.	£ 59.99
2Mb ST board+chips, kit	£ 129.99	4Mb ST boards+chips, fitted	£ 279.99
TOS 1.4 kit (6 or 2 ROM's)	£ 39.99	STFM Blitter chip, kit	£ 39.99
512K SIMM/SIPP (STE)	£ 24.99	2Mb SIMM/SIPP (STE)	£ 79.99
Amiga 512K no clock	£ 26.99	Amiga 512K with clock	£ 29.99
Exchange STFM PSU	£ 59.99	ROM switch + TOS 1.4	£ 49.99

Please check the configuration of your machine with our staff before ordering any upgrade and have your machine open when you phone. All upgrades/repairs carried out by our service centre carry a 90 days parts and labour guarantee. Our service centre can repair/upgrade any ST, Amiga. Please phone for repair/upgrade charges. Please add £1.50 P&P for upgrades priced under £100.

Spectre GCR

"Power of the Mac, without the price."

- ☐ Reads, writes and formats Mac disks.
- ☐ Supports Hard drive and second floppy.
- ☐ Compatible with STE, Stacy.
- ☐ 30% bigger screen area than Mac Plus.
- ☐ Runs 20% faster than Mac Plus.

Spectre GCR V3 £290 Phone for 128K ROM's

We are the consistently longest serving supplier

star Printers

All dot matrix printers come complete with IBM Centronics cable. All Star printers include 12 months on site warranty, UK Mainland only.

Star LC-10	140/36cps	£ 169.99	Citizen 120D+	120cps	£ 139.99
Star LC-24/10		£ 209.99	Citizen Swift	192/64cps	£ 319.99
Star LC-200 colour printer		£ 219.99	Citizen swift Colour upgrade		£ 39.99
Star LC24-200	222cps	£ 249.99	Citizen Swift 9		£ 209.99
Star LC24-200 colour printer		£ 319.99	64K buffer/3 input switcher		£ 29.99
Star Laser 8DB	2Mb RAM	£ 1849.99	256K buffer/3 input switcher		£ 49.99

How to Pay

You can phone your Access or Visa card details or send a cheque/postal orders made payable to Ladbroke Computing International. Please allow sufficient clearance time for cheques.

(0772) 203166 Fax 561071

Shop & Mail order premises: 33 Ormskirk Road, Preston, Lancashire, PR1 2QP Open Monday to Saturday 9:30am to 5:00pm. Phones answered from 9:00am. Dealer enquiries welcome. Ladbroke Computing International is a trading name of Walton Marketing Limited. All trade marks recognised.

TOP ADD-ONS FOR YOUR ST

Out of the vast range of peripherals available for your ST, Alex Soboslay selects the top buys in each category

MODEMS

Dataphone Pro 4 • £458.85
Quest Dataphone
Tel: 0733 51029.

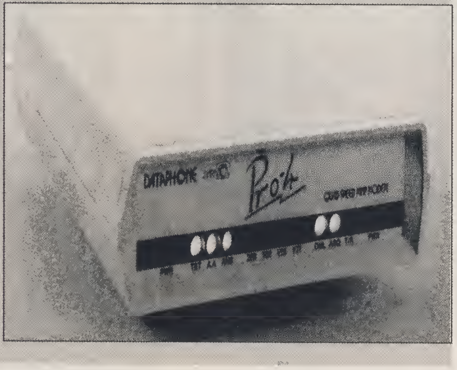
A top-flight professional modem, BABT approved, with a built-in microprocessor and battery back-up to retain your settings.

Its speed buffering supports terminal speeds of up to 9600 baud – all you'll ever need.

Features include extended Hayes AT and V25bis command sets, internal V54bis modes, automatic line speed and mode recognition, synchronous/asynchronous operation, auto-dial and auto-answer, and intelligent multi-speed operation – with LEDs on the front to indicate whether it's working in V21 (300 baud), V23 (1200/75 baud), V22 (1200 baud) or V22bis (2400 baud); other baud rates can be selected with switches on the back of the unit.

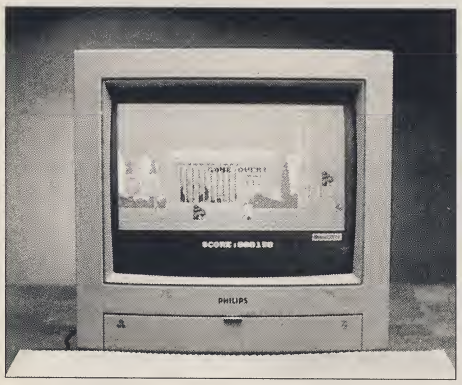
What's more, the Pro 4 has auto MNP mode – that is, it automatically uses the Microcom Networking Protocol error correction system if it's talking to another modem that can handle it, and doing so also compresses data and can halve throughput time.

It's reliable enough to be the unit chosen by Malcolm Burridge of the excellent Bath BBS bulletin board (0225 840060). If you don't need quite this level of sophistication, try the US-made Supra 2400 modem (£149.95 Surface Ltd 081 566 6677) – it's fully Hayes compatible, boasts auto-dial and auto-answer (tone or pulse) and can cope with 300, 1200 and 2400 baud.



MONITORS

Philips CM8833 Mark 2
£310.49
Philips
Tel: 081 689 2166.



An attractive, distinctively-styled colour monitor, with 14-inch screen, 600 x 286 dot per inch resolution, stereo sound (especially useful if you have an STE) and a green screen facility. Designed and manufactured to meet anticipated European monitor safety standards. It accepts TTL-digital and RGB-analog computer input signals (using a 9-pin D-type socket rather than the more common SCART lead), as well as CVBS input for video signals, and features phono audio inputs for use with an STE – and even has a stereo earphone socket. What's more, with an optional tuner it can even receive TV pictures. The most-used controls are conveniently located at the front, behind a neat fold-down flap. It's excellent for both low- and medium-res display.

MICE

Naksha Mouse
£28.95
Naksha
Tel: 0925 56398.

A smooth, very well-built mouse from a reputable maker. The ball sits snugly in its case and doesn't make life hard by jiggling about and causing any of those old wandering pointer problems. Operates at a high 280 dpi resolution, so you need relatively little effort to move the pointer across the screen. Comes complete with an exceptionally long lead, a holder and a sensible rubbery mouse mat that doesn't get worn and threadbare like the foam sort. Comfortable to use, with good microswitch clicking action and large buttons.

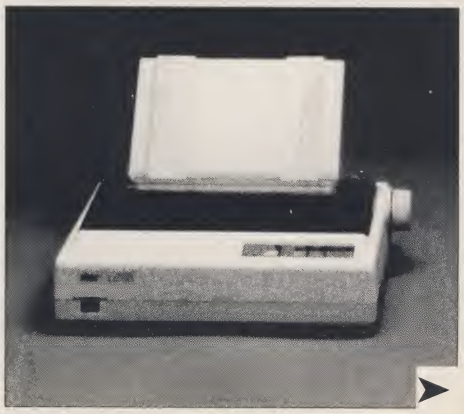
PRINTERS 9-PIN

Star LC-10
£263.35
Star Micronics
Tel: 0494 471111.

In ST Format's recent survey of 9-pin printers, this came out a clear winner. Attractively designed, with its main switch on the front where it should be and clearly-marked switches on the top. Has a parallel interface only (though an in-line converter is available if you really need a serial link), positioned at the side out of the way of the continuous paper feed at the rear.

The push-feed paper tractor automatically parks the continuous paper out of the way so you can use single sheets from the guide attached at the back of the top panel. The easy-to-use switches control print pitch and NLQ print styles (there are four available, plus italic versions of each), and the printer can be pre-configured using combinations of the front-panel switches to override software style commands.

The buffer is a large 4K, and there is an excellent



➤

range of special printing effects, including double-height. Print quality is good and operation is quiet, if slower than average in NLQ. The printer provides graphic characters in both the Epson and IBM control sets, and is switchable via two DIP switches.

The only drawback is that the DIP switches are awkwardly located under the head-mounted ribbon cartridge. The LC-10 is strictly speaking now discontinued, but it and its colour version are still widely available.

Its successor the LC-200 (£297.85) is just as good and, with the addition of a colour ribbon fitted, it can produce colour output.

24-PIN

Star LC24-200
£366.85 (colour version £424.35)
Star Micronics.

Another Star, the LC24-200 offers exceptional versatility through electronic DIP switches and front-panel presets. Emulation of both the Epson and the IBM character sets is flawless, and the quoted print speeds are impressive.

This printer also has the standard Star push-feed paper system which comes with its handy paper parking facility, so you can leave continuous paper loaded but parked neatly out of the way while you feed single sheets in at the top.

The LC-24-200's buffer memory is 7K as standard, but optional RAM cartridges are also available which can take that up to 39K. A huge range of additional fonts is available, once again on optional cartridges. These are loaded through the easily-accessible cartridge port. Other options include a serial/parallel converter and a handy cut-sheet feeder.You couldn't ask for more from a dot-matrix printer.

LASER PRINTER

Star Laserprinter 8 II
£2,172.35
Star Micronics.

If you're looking for a laser printer, you're looking for quality rather than compactness – which is just as well, because this one comes in a fairly large case and feeds paper from a 150-sheet tray projecting still further from the front or from a single sheet feed guide on top of the paper tray.

Oh, and you might need access to the pull-down tray at the rear for face-up delivery. But what it delivers is worth it! The range of fonts is excellent and includes Times Roman and Prestige.

You get the typical laserprinter 300 dpi resolution, better-than-average 8 pages per minute output, and even the capacity to print in both portrait and landscape orientations on the same page. The printer emulates the Hewlett Packard LaserJet Plus, IBM Proprinter, Epson EX-800 and Diablo 630, so you should have no trouble finding a printer driver in your software to work it. There's a good comprehensive manual, and a sensible control panel with membrane-type switches and the usual 16-character LCD display.

Both parallel and serial ports are standard, and 1MByte of memory is supplied; you can add more via a panel at the side – an extra megabyte (for £228.85) or even more. There are also two font cartridge ports at the front under the paper trays.

The toner and drum cartridge are in one piece which simply slides out for replacement after a quoted 4,000 pages, with a replacement cartridge setting you back £109.25.

FLOPPY DRIVE

Cumana CSA354
£75.99
Silica
Tel: 081 309 1111.

A very sound, reliable 3.5 inch drive from a well-established and highly-regarded manufacturer – in fact, Cumana drives are so reliable that they're recommended by many companies, including suppliers of back-up software. This one's a slim 25mm drive unit, with low noise and low power consumption quoted and a capacity of 1MByte, depending on how it's formatted. Indeed, it's especially useful if you're working with oddly-formatted disks that don't conform to the standard nine or ten sectors, 80-track format. It comes with no throughport or other frills, but an internal power supply is fitted – which the experts generally agree is preferable to budget drives that take their power from the ST itself. This drive also has the advantage that it's compatible with many popular micros if you buy the right leads.

SCANNERS

Golden Image Scanner
£179.00
Evesham Micros
Tel: 0386 765500.

This neat little hand-held unit comes with a generously long cable, and its sturdy interface plugs into the ST's cartridge port. It scans in four resolutions – 100, 200, 300 and 400 dpi, though the latter two are very memory-hungry and 200 dpi is adequate for most uses. Only monochrome results are possible, but there are three scanning modes, enabling you to scan text or black-and-white in the first mode and colour originals in the other two, with the scans being "dithered" to produce acceptable grey scales.

The contrast control is adjustable to help you get the sensitivity right. It requires 1MByte of memory and a double-sided disk drive, and the maximum width of scan is four inches, but maximum length is limited only by your ST's available memory. The scanner's real advantage is the exceptional. Touch-Up software included, which can import and save images in virtually any format, including those used on PCs and Macs. It's not as fast as some other scanners (for example the Daatascan Professional, £179.99 from Pandaal Marketing, 0234 855666), but it scores with its image processing power and especially its software. A comprehensive manual and a power supply unit with 13-amp plug are included in the package. ■

HARD DISK

Vortex Datajet
Broad range from 30 MB for £499 to 180 MB for £1,499
Silica
Tel: 081 309 1111.

These German beauties are not cheap, but you get what you pay for. In ST Format's 'recent survey of Hard Disks, these met the challenge of all comers.

All drives in the range have custom-designed circuitry, including Vortex's own 'microboard' – a PCB that not only switches the drive monitor on and off but also controls the data transfer itself, the hardware write-protection, the SCSI host adaptor (that's the interface system which connects the ST and the hard disk) and the cooling fan – which comes on only when it's needed, so you don't get that annoying constant whine. You can write-protect the whole disk simply by flicking a DIP switch on the back of the casing.

Access times are a very respectable 25ms, and the units are both auto-booting and auto-parking – the drive head automatically parks itself clear of the disk surface when you switch off, ensuring that data can't be damaged if the unit is moved.

A drive output socket (throughport) on the back of the casing enables you to chain more than one drive to the ST or add a laserprinter. The accompanying software is very comprehensive, covering back-ups and auto-boot configuration, and extended partitions are fully supported so that you can format beyond 16Mb, compared with the standard 10Mb.

MIDWINTER II
FLAMES OF FREEDOM

The Flames have been lit - A new age dawns.

Midwinter II. Flames of Freedom will be available for your Atari ST, Commodore Amiga and IBM PC compatibles in the Spring of 1991

RAINBIRD

MASTERS OF STRATEGY

MicroProse. Unit 1, Hampton Road Industrial Estate, Tetbury, Glos. GL8 8LD

GAMES THAT TAKE

The ST is not just a games machine but when it turns its chips in the direction of recreation it certainly has a wealth of software to choose from. Just to prove this, Ed Ricketts games reviewer for *ST Format* is here to take you through the essential ST games to have in your collection.

SHOOT-'EM-UPS

XENON 2

Mirrorsoft
Tel: 071 928 1454
£24.99

The Bitmap Brothers breakthrough game, it improves a thousand-fold over the original. Plot? There isn't any - it's a massive orgy of violence and alien slaughter in which you're an initially puny spaceship intent on destroying every living thing in your way. Collect the tokens as you progress through this vertically scrolling blaster and visit the shop to transform your VW Beetle clone into the equivalent of a dirty great Sherman tank. Fantastic graphics, weird backgrounds, lovely animation and a soundtrack by Bomb the Bass help keep that one-more-go factor high. A classic.

Graphics: 9
Sound: 8
Instant Appeal: 9
Lasting Interest: 8
Addictiveness: 9

TURRICAN 2

Rainbow Arts
Tel: 0322 292513
£24.99

Battle your way through every one of these eight levels and you'd best change your name to HAL, because you ain't human. Each stage covers a different area, progressing from scaling rocky heights over waterfalls in Level one, to underwater antics in Level three. Get passed this lot and you finally meet the Big Cheese itself, the Giant Machine, on Level eight. Shoot the aliens to release tokens and provide extra fire-power, such as the death-dealing flame-thrower, along the way. Excellent visual effects (over 2Mb of graphics in all) are combined with silky smooth scrolling and bone-shaking sound effects to make a game that the SAS would be glad to train with.

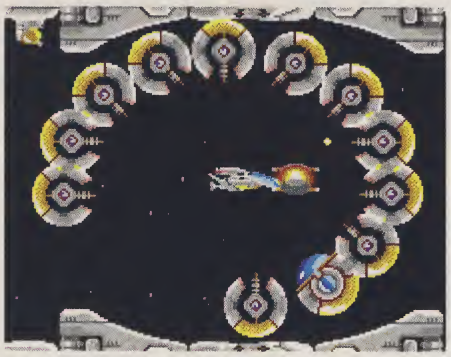
Simple but not easy, Turrican 2 offers a real challenge

Graphics: 9
Sound: 8
Instant Appeal: 9
Lasting Interest: 8
Addictiveness: 8

R-TYPE

Activision
(Watch out for the budget version)

R-Type was the coin-op noted for its weird organic-style creatures combined with fabulously addictive gameplay.



R-Type: *A classic coin-op converted to a classic game*

Against all the odds Electric Dreams managed to create a superb conversion, keeping the graphics and addictiveness in the 16-bit conversion, even down to the huge spaceship on level three. A horizontally scrolling game which features large well-drawn sprites, impressive explosions, power tokens to beef up your ship and the strangest, largest end of level aliens you ever did see.

Forget that the scrolling could have been smoother, forget the annoying soundtracks - just feel the quality of the gameplay.

Graphics: 8
Sound: 6
Instant Appeal: 9
Lasting Interest: 9
Addictiveness: 10

STRATEGY

Powermonger

Electronic Arts
Tel: 0753 49442
£29.99

How do you manage to top *Populous?* Write a game that's basically similar but a thousand times more advanced technically. That's what Bullfrog did with *Powermonger*. Playing the role of a fallen Captain, your aim is conquer any one of 195 territories, chosen from a vast map, by force, subterfuge or intelligence. Up to three other players will be attempting the same thing, so it's not all plain sailing. Issue commands to the people via the icons - you can invent weapons, attack other townships, join forces with another leader or spy on them. Effects are light years ahead of *Populous* - pseudo-fractal landscapes, variable zoom and viewpoint are coupled with immensely atmospheric sampled sound effects to create a believable and realistic world.

Graphics: 9
Sound: 9
Instant Appeal: 6
Lasting Interest: 9
Addictiveness: 8

A huge and absorbing game, Midwinter has it all

Midwinter

Microprose
Tel: 0666 504326
£29.99

In the year 2099, a meteorite has struck the earth, causing a global freeze and the creation of strange new land masses. You play the leader of a group of 32 people intent on surviving in this cold waste, desperately struggling against a hostile force determined to take over your food factories and mines. Played in a massive game world with visuals in solid 3D, virtually endless variations to gameplay and an original plot,

KE YOU FURTHER

Midwinter looks as if it will be bettered only by its forthcoming sequel, *Midwinter II: Flames of Freedom*.

Graphics: 9
Sound: 9
Instant Appeal: 8
Lasting Interest: 10
Addictiveness: 9

Supremacy

Melbourne House/Virgin
(071 727 8070)
£29.99

A space opera on a grand scale: Supremacy

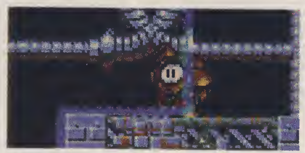
God games are all the rage these days, and deservedly so, when they're as playable as *Supremacy*. Beginning with a single planet and no way of supporting life, you must establish a colony and build your armies to protect yourself from one of four computer-controlled enemies of varying intelligence. Colonise new planets, attack your opponents and win through to become the supreme controller of the planetary system. A strategy game with enormously detailed and attractive graphics, similar but far superior to *Millenium 2.2*, *Supremacy* will keep you occupied until the stars fall - well, nearly.

Graphics: 9
Sound: 8
Instant Appeal: 7
Lasting Interest: 9
Addictiveness: 9

PLATFORM GAMES

Flood

Electronic Arts
(0753 49442)
£24.99



Aquatic antics and platform puzzles: that's Flood

Bullfrog broke with their normal style of game when they wrote Flood. It's a fun platform game over 42 levels featuring a character called Quiffy who can swim and stick to ceilings.

On most levels there's a tap which can't be turned off, so the water level gets higher the longer you go on. You have a limited supply of oxygen, but don't spend too long underwater or it's curtains.

Flood features some excellently animated creatures and fiendishly arranged puzzles. But it's not just good looks, it also provides a real challenge for platform aficionados.

Graphics: 8
Sound: 8
Instant Appeal: 10
Lasting Interest: 8
Addictiveness: 9

Prince of Persia

Domark
(081 780 2222)
£24.99

Film quality animation and some involving puzzles - Prince of Persia

Stonkingly good animation lifts this ladders 'n' levels game from the realms of a simple puzzle to an immensely playable romp through a Far Eastern castle. Starting with the dungeons, you have just one hour to search out the Princess before she is married by the evil Vizier. Useless plot, but the gameplay makes up for it. Every little movement is so well animated you'll spend ages just watching the Prince running about, falling off ledges and being stuck with a sword. Some real challenges, too - it's not all plain sailing.

Graphics: 9
Sound: 7
Instant Appeal: 9
Lasting Interest: 9
Addictiveness: 9

Rick Dangerous

Microprose
(0666 504326)
£24.99

Rick Dangerous II - *Rick Dick to his friends*

If you enjoyed *Rick Dangerous*, which most game players worth the name obviously did, then you'll love the sequel.Yes, the man with the jump is back, and this time he's bought his armoury.

All the gameplay and cunning traps of the first game but with added features such as sliding dynamite, grenades and a laser.

This time round there's full horizontal and vertical scrolling, so there's more freedom of movement; the graphics are improved (the backgrounds are far more varied and there are lots more enemies thirsting for your blood); and the puzzles, features and traps are ten times as nasty as *Rick Dangerous 1*.

Fortunately it's not nearly as difficult to get anywhere as in the prequel, since you can start on any one of the first four levels.

Graphics: 6
Sound: 6
Instant Appeal: 9
Lasting Interest: 8
Addictiveness: 8

ADVENTURES

Operation Stealth

Delphine/US Gold
Tel: 021 625 3388
£24.99

The icon driven graphic environment is definitely the direction in which adventures are going. Operation Stealth is an excellent example of how good a game like this can be when done properly. Playing Agent John Glames your aim is to track down a missing Stealth Bomber - not something that's likely to be lost, admittedly. Everything is controlled by pull down menus and icons, so interacting with the environment is very easy. Graphics haven't been neglected, either: most objects have a picture to describe them and the backgrounds are very detailed and authentic. An adventure that even non-adventure players would enjoy playing.

Graphics: 9
Sound: 8
Instant Appeal: 7
Lasting Interest: 9
Addictiveness: 9

B.A.T.

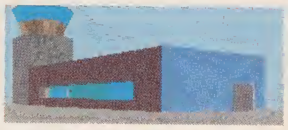
UBI Soft
Tel: 0252 860299
£34.99

The best selling ST game of the moment and with good reason. *B.A.T.* is a futuristic graphic adventure with 1,000 locations, and once again it's icon controlled. You're from the Bureau of Astral Troubleshooters who are after someone by the name of Vragnor who's out to topple your planet. Along the way you'll meet all sorts of strange characters including Stickrobs and Glokmups, not all of whom are entirely friendly. Graphics are top notch - rating in both the weird and futuristic stakes, and 16 track sound is provided by the extra sound card which is included in the, admittedly high, price.

Graphics: 9
Sound: 10
Instant Appeal: 7
Lasting Interest: 9
Addictiveness: 9

Damocles

Novagen
(021 449 9516)
£24.99



Feel the width and the quality - Damocles

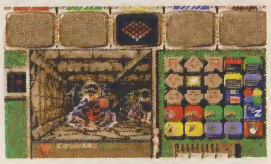
Certain programmers just don't know when to stop. Paul Woakes, author of *Mercenary,* took four years to write this game and it's no wonder when you look at it. A whole solar system of nine planets is yours to explore as you try to halt the comet Damocles before it collides with the planet Eris. Hundreds of locations, all displayed in solid 3D, contain many tricks and traps to keep you playing even after you've completed your main task.There are 16 million individually numbered pyramids on the planet Midas and you can visit each and everyone one!

➤

Graphics: 8
Sound: 2
Instant Appeal: 9
Lasting Interest: 10
Addictiveness: 9

Captive

Mindscape
Tel: 044 486761
£24.99



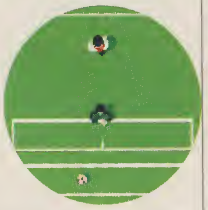
A role playing game extraordinaire in the style of *Dungeon Master*. Far in the future, you've been imprisoned for 200 years when you're accidentally woken. Your only thought is for escape, and the only way to do it is to remotely manipulate four droids to try and find you in your cell. Being droids, you can add parts to them along the way to enhance their abilities; likewise, things can go drastically wrong, such as their vision failing at a crucial moment. Fiendish puzzles and complex gameplay mean this isn't something you'll finish in one afternoon, but the futuristic 3D graphics and sampled sounds will keep you at it long into the night.

Graphics: 9
Sound: 8
Instant Appeal: 8
Lasting Interest: 9
Addictiveness: 9

SIMULATIONS

Kick Off 2

Anco
Tel: 0322 292518
£24.99

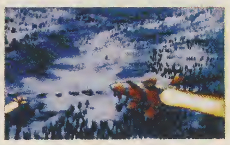


The undisputed king of soccer sims. No other football game offers as much flexibility, as many options or as much playability as this. Choose from playing in position or as a team, against the computer or another player, on four different pitches, with four different wind strengths, at five different levels, the list of options is endless. Small sprites on a perfectly scrolling pitch and excellent touches such as the way a player limps when he's injured mean you won't be able to stop playing *KO2* once you get the hang of it - even if you're not into footy.

Graphics: 7
Sound: 8
Instant Appeal: 8
Lasting Interest: 10
Addictiveness: 10

MiG-29 Fulcrum

Domark
Tel: 081 780 2222
£34.99

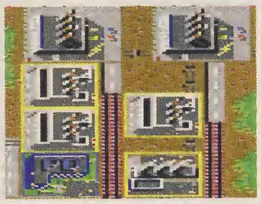


Flight sims come and flight sims go, but *MiG-29 Fulcrum* just can't be ignored. All the detail and authenticity of a real Soviet MiG-29 is coupled with rivetting gameplay to provide a breath-taking ride through enemy skies. Treat it as a 'serious' simulator and practise your flight techniques, or ignore the techy stuff and blast hell out of the opposition on one of the five missions. Plane control is absolutely realistic, so learn to master this and you can fly the real thing - in theory, anyhow. Fast, smooth vector graphics help to sustain the illusion.

Graphics: 7
Sound: 7
Instant Appeal: 6
Lasting Interest: 9
Addictiveness: 9

Sim City

Infogrames
Tel: 071 7388199
£29.99



Sim City is the perfect pastime for when you're feeling megalomaniacal You have complete control over the growth of a city, and every planning decision rests with you. By using icons to place zones, you gradually build your metropolis using residential blocks, commercial and industrial areas, roads, rails, stadiums and so on.

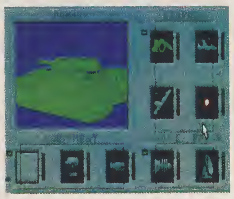
Keep the population happy - don't raise taxes too high, provide adequate facilities, and, with any skill, your town will boom.

Get it wrong and it'll soon be a ghost town. If you're feeling cocky you can even inflict a disaster such as an earthquake and then try to recover from it. An immensely absorbing game with almost infinite variations, marred only by the somewhat primitive graphics.

Graphics: 5
Sound: 1
Instant Appeal: 8
Lasting Interest: 10
Addictiveness: 9

Battle Command

Ocean
Tel: 061 832 6633
£24.99



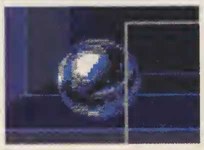
Battle Command is the follow-up to *Carrier Command* and is in the same excellent league. Taking control of a Mauler tank, you can choose from 15 missions, each more difficult than the last, but all are extremely violent and involve you battling against the enemy. Various weapon systems are available for your use, such as the Banshee surface-to-surface missile and the Sleeper mine. Smoothly animated solid 3D graphics mean you're in there with the action and the challenge to complete every mission ensures high long-term interest.

Graphics: 9
Sound: 8
Instant Appeal: 8
Lasting Interest: 9
Addictiveness: 9

PUZZLES

The Light Corridor

Infogrames
Tel: 071 7388199
£24.99



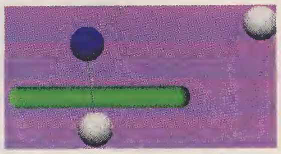
The Light Corridor - a slight misnomer, methinks

What's the oldest video game in the world? *Pong*. And that's basically what *The Light Corridor* is about. Under your control you have a paddle with which you must bounce a ball down a long corridor, avoiding the obstacles along the way. It sounds simple but that's because it is. However, it's been programmed with typical Gallic flair. The graphics are simple but effective and scroll nicely, sound is kept to a functional minimum and the addictiveness quotient is very high. A simple idea executed with great style.

Graphics: 7
Sound: 7
Instant Appeal: 10
Lasting Interest: 8
Addictiveness: 9

E-Motion

Accolade
Tel: 071 585 3308
£19.99

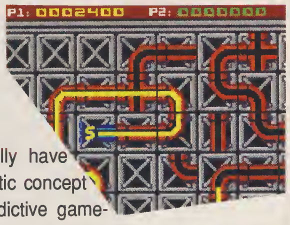


There are several candidates for the Weirdest Game trophy and this is one of them. In *E-Motion*, you take control of a floating craft which is controlled in a manner somewhat like the old Asteroids ship. Your mission is to make the balls that surround you disappear before they explode, by making them collide with another object of the same colour. Collide two balls of a different colour and they produce a new smaller ball. There are, of course, many other complications along the way. Impossible to describe but magic in action, *E-Motion* features some extremely attractive and colourful graphics which help enhance the surreal atmosphere of the whole game.

Graphics: 9
Sound: 8
Instant Appeal: 7
Lasting Interest: 9
Addictiveness: 9

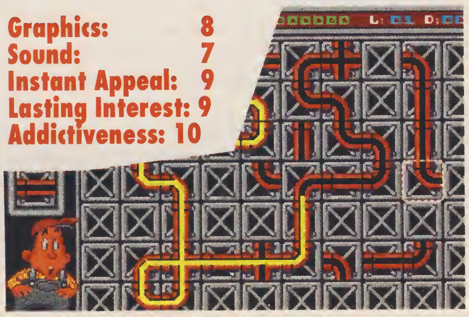
Pipe Mania

Empire
Tel: 0268 541126
£19.99



Puzzle games usually have an extremely simplistic concept but maddeningly addictive gameplay. *Pipe Mania* is one of these. Pipe sections are given to you one by one from the dispenser. It's up to you to place these in the correct position on the screen to carry the Flooz liquid before it starts to flow from the starting point. The pieces aren't given in the correct order so you have to think several moves ahead to make sure the flow is uninterrupted. Bonus pieces and obstacles stop the game from becoming repetitive. One of the most addictive games ever produced.

Graphics: 8
Sound: 7
Instant Appeal: 9
Lasting Interest: 9
Addictiveness: 10



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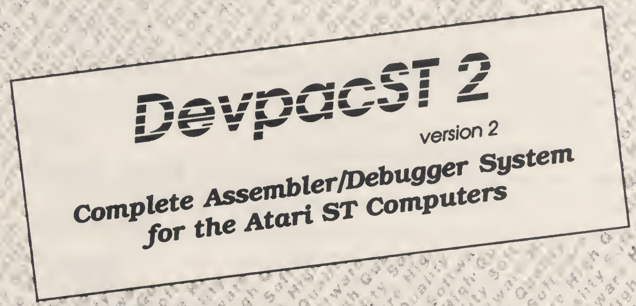
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“ANYONE WHO I

STUPID.... ”

The ST Pad and the ST Book. Two new pieces of hardware. We have been told that it is ‘vapourware’. That we are not going to be seeing them in this country for at least two years.

Two years is the top end of the timescale. I hope we will see them within the next 18 months in the UK. ‘Vapourware’ is an interesting idea. Atari is sensitive to the fact that it has previously shown products long before they were due to be released. It has suffered from over-promoting release dates. Obviously we are keen not to repeat such mistakes.

As I say 18 months is the time frame I have set and would like to see them in the UK. Obviously there’s a lot that can happen between a product being shown at the first time at a show, and the final specification factory built machines coming out.

18 months is a long way off. Is there any idea of price point for the Pad or the Book?

No. None at all. All I’d say on that is that everything we launch we try and launch, at a price advantage. It’s almost an Atari trade mark that it brings technology to people at less of a price than maybe they would expect had they gone elsewhere.

Are there any details on the ST Pad aside from the fact that it’s keyboardless.

It is difficult to explain, it is literally a keyboardless pad. It’s almost like one the old Etch-A-Sketch machines you used to see. It has the standard portable-type screen with a GEM interface. Its light-pen can double as a mouse. It really is just like half one of the current portables. It has no keyboard input at all.

The Pad heralds the death of the Stacy, would that be valid?

The Pad is seen as a replacement to the Stacy when it is actually launched.

So who are the notebooks aimed at?

Obviously, one of the biggest areas is people who are scared of using computers at the moment. Research has shown that the biggest single contribution to the techno-fear surrounding computers is the keyboard. It’s the “Well I can’t type” syndrome. A pen is something that everyone knows how to use, it’s second nature. The other area is those people who are interested in the new technology and are just looking for the latest applications. Some of the applications that can be written for a light-pen and a smart screen environment could quite change some of the applications we’ve got at the moment.

This popularisation also leads us quite neatly into your new Family Curriculum package.

Well the Family Curriculum is the first pack that Atari has launched since adopting a strategy that concentrates more on computing applications for the ST as opposed to a game playing machine that also can do a bit of computing.

Central to the way we are going to be marketing and promoting the ST range this year, and by this I mean everything from the 520 ST through to the TT is that they are very good, very versatile, very powerful computers. They happen at the moment to have the majority of they’re useage in the games arena. Over time we see that arena threatened by primarily by 16-bit consoles. And what we’ve got to do is get a positioning for the 16-bit computers that says “This is why you should spend an extra £100, £150 on a computer”. It’s not just so that your teenage son can play games, by all means he can do that, but he can also develop into the world of computers. He can learn about word processing, desktop publishing, music, creativity programming.

With the Family Curriculum we’ve developed a pack that is definitely a none-game pack. There isn’t a single game there. What we are trying to do there is position it as a family pack not just for the adolescent male child who will put it in his room, rig it up to his television or monitor and that will be the end of that. It should be expected as part of the family furniture if you like. It is a family property.

“.... rather than saying that Apple is now competing with Atari, in some cases Atari is now seriously competing with Apple”

Does the Family Curriculum mean that Atari is abandoning its games playing user base?

Anyone who thinks that we’re moving away from the games market for any reason other than the long term benefit of the ST is totally wrong. Although we’re moving in perceptual terms away from a games focus, we are not ignoring games useage because 70 per cent of our useage is with kids playing games. We are not going to ignore that 70 per cent. We are going to make sure that it’s still catered for, that games are still developed for the ST, that we do products, and this applies particularly to the Turbo Pack, that are a games action packs – and that’s still 50 quid cheaper than the Amiga. So, although we are changing emphasis, games are still important to us.

Peter Staddon, Atari’s marketing manager speaks out....

Doesn’t this change in attitude imply that the ST has been wrongly positioned or marketed badly previously?

I think that it is difficult to say that a machine which has grown so dramatically over the last five year period has been handled badly. There have been reasons why it has been positioned as a children’s leisure, games machine over the last couple of years, and the growth we’ve achieved by pursuing that route has given us a very strong position in the UK market now.

No position is ever set in stone for decades on end. What we’re doing now is recognising that the market place is changing and we are changing our position and our marketing emphasis behind the ST to reflect that and to reflect where we believe our strengths will be, not just this year but in the next five years. So we’re looking forward with this positioning. And what we’re doing is moving to where we want to be before we have to get there.

Atari is moving with a market which is evolving away from games?

I think there will be increased segmentation between games playing with the rise of the 16-bit consoles from just about every major manufacturer, including Atari. The market will continue to diverge, and as price drives down consoles we have to see a stronger position for computers and computing benefits within the UK mar-

IGNORES ATARI IS

So says Atari's marketing manager, Peter Staddon. We talked to him about the new notebooks, the Family Curriculum package and the STFM. Along the way we took in Commodore, the Lynx, Atari's strategy for the next five years, and the future of the STE.

ket. That's why packs like the Family Curriculum are starting to make their way in the market and, from Atari's point of view will be the focus of our marketing activity this year.

The STE will be the focus. So what's the future for the STFM?

It's a machine with a lot of history within Atari and the marketplace. It has been phenomenally successful for us. No matter how successful the past has been you've always got to look forward.

Having said that, we are in to such a strong demand for the FM product that will continue to be on sale. I will surprised if it isn't still available up, probably to Christmas. It's not out of the question to say that the STFM could still be on sale at Christmas 1992 if there is sufficient demand.

Could you conceive of a point in the next year when we have an STE Discovery pack?

The basic answer is yes. With the STE it would make sense to have a product similar to the Discovery pack that promotes the same level of learning and fun. That would obviously have to be below the 1040 pack.

Can you say when that might that be and how much it will cost?

No. I don't think we've settled on any price point yet. The price point from May of the 520 STE is £349 and obviously we are very keen to see how people react to that. We're not into cutting the price of our machines for the sake of it.

Now onto the competition. Is the Amiga a serious threat and where else do you see competitors?

Obviously the Amiga is Atari's single biggest competitor, that's a statement of fact. Within the music environment, the situation is more complicated – you have the Mac, you also have a lot of PC MIDI products, and the Amiga is starting to creep in around the edges but Atari is still dominant within there. The challenge we've got is to make sure that we keep our market share within that arena. When you've got 70 per cent of the market it's easy to take your eye off the ball and loose 5 or 6 per cent.

Within DTP, obviously Apple is very, very strong and rather than say Apple is now competing with the Atari, in some cases Atari is now seriously competing with Apple.

When you look at products like the Mega STE and the TT, and you look at the performance that they can deliver and you look at the software which is beginning to be developed – you've had *Calamus* for a while, word processors like *Caligrapher*, image processors like the *Retouch Professional* package, these types of programs do give these machines an extra credibility.

If people are not concerned about buying badges or perceived brands, and they just look at the specifications of this machine versus that machine, every time they would go for an Atari.

A lot of people at the moment are thrown towards Apple because it is seen as a more serious computing brand – hence our desire to move away from games and into the more serious arena.

Talking of badges and brand names. Commodore has already said this year that Atari is not competition. How do you react to this?

It's wrong to say that we don't care what other people are doing because that would comply and arrogance.

> **"...any mistakes we've made we've learnt from, we're very good at learning from mistakes. I'm looking forward not back."**

What we are doing is we are concentrating on what Atari UK and Atari Corp want to achieve. Within that we have to recognise the competitive environment we are operating in. Not only from Commodore but also from Acorn, Apple, PCs and so on. What we're trying to focus on is getting what we want to do right and following our agenda rather than following an agenda which has been whipped up either by one of our competitors in which case we are rather than leading or by a trade or industry whirlwind.

I was interested to read those remarks. I think they betray a fundamental misunderstanding of what a brand actually is. Brands take a lot of money to create, and the Amiga has been a brand for a long time. But there are good brands and bad brands. The Amiga's success over the last year or so has shown that it has been handled well within in its market place and market segment.

The ST's success over the same period has shown that, within the market segments we want to address we are recognised as a strong brand and we are recognised as a successful brand.

So I really think that although some the remarks about brands were irrelevant, some of what was said about prices and bundles is old news, that's 18 months ago. I'm happy for them to be looking back at mistakes we made 18 months ago because hopefully that means that not looking at what we're doing now. And any mistakes we've made, we've learnt from, and we're very good at learning from mistakes. I'm looking forward not back. What the competition says interests me but won't necessarily affect what I want to do, won't effect my agenda. I know what I want to do, I know where I want Atari to be in 5 years time and I know what I have to do to achieve that.

There are rumours of some large software houses not bothering to develop games for the ST.

All the developers that I've talked to, and all of those that our software support people have talked to are committed to developing for 16-bit computers, both the Amiga and ST. At the moment a few software houses are talking about the Amiga as a generic 16-bit machine because they may perceive it as sexier. However they are as aware as anyone about the dangers and the fashion nature of this market, and that Amiga image could be blown over in a fraction of the time it took to build up. So people are not necessarily committed to building software for one 16-bit format.

Anyone who ignores Atari within the 16-bit market is stupid because of the installed user base, the worldwide sales, the volume sales we've got. We've certainly had no feedback from any software house not supporting the ST What we're getting is people committed to developing 16-bit games" primarily on consoles, and then porting them on the Amiga, or the ST and the Amiga. We have a number of developers working very closely with us on some major projects which I can't talk about at the moment.

Finally, are there any plans for CD-based STs

Obviously we don't want to be the guys who launch the Betamax version of the CD computer. The developments between the likes of Philips and Sony to develop a CD standard are quite awesome. So we will wait for a standard to be developed. CD technology is not new to Atari, and not something it would take us very long to kick in once we have the final details. We don't have a product now that I can say this is our CD-interactive player, disk drive whatever, but given the amount of development work that Atari has already put into this area it will take us very little time to fine tune to hardware or the software.

Thank you for your time ■

VISITING THE WHOLE FAMILY

These days Atari is stressing that the ST is part of a range of computers, rather than a stand-alone games machine. So which one should you buy? Alan Fitch examines the portfolio of products in the ST family.

THE 520 ST DISCOVERY PACK

As its name suggests, the Discovery Pack is intended to be the entry point to the ST range, and it's aimed at first-time users – you get all that's needed to start computing with the ST and begin what Atari hopes will be a long relationship with the whole range of STs.

Hardware

Apart from a 520K STFM with 1Mb disk drive, you get a TV modulator that allows the computer to be used with any domestic television set, and eight pieces of software – one of which is an interactive tutorial program that takes the novice user through the ST's facilities step-by-step.

Software

On the pure entertainment side, there's *Carrier Command* – an original strategy game that offers 3D graphics – complemented by a trio of fast 'n' furious conversions from the world of coin-operated arcade machines: *Outrun*, *Space Harrier* and *Bombjack*.

All you need to do is buy a joystick for five or ten pounds, and thrills and spills can be yours.

For the more seriously inclined, there's *Neochrome*, a complete art and graphics package that allows some stunning computer images to be created and edited, *FirST BASIC* which should prove a useful introduction to the world of programming, and *S.T.O.S.* – the core module of a suite of programs that together build into a comprehensive games-creation utility.

Price: £299.99 including of VAT

520ST
ATARI
DISCOVERY PACK
WORK, LEARN AND PLAY WITH YOUR ATARI ST

• Left: the foundation of the ST range – the STFM
• Above: the entry-level bundle, the Discovery Pack. Aimed firmly at the novice computer user, it contains all you need to get up and running

THE 520 STE TURBO PACK

The next step up the ST ladder is represented by the Turbo Pack – which costs £50 more than the basic, entry level bundle and contains a more powerful version of the basic ST computer – the 520K STE, which offers enhanced sound and graphics capabilities as compared to the entry-level machine.

Hardware

The STE is an all-round better machine than the STFM. For a start, the operating system has been upgraded and allows disks to be formatted in the MS-DOS format used by IBM PC compatible machines, and disk loading and saving operations are much faster.

Then there's a palette of 4096 colours rather than the 512 colour palette found on the STFM, and sound is handled by two extra chips that relieve the central processor of the job of handling sound output, freeing processor time for core tasks like running your program! You get a TV modulator, so there's no need to splash out on a monitor...

Software

On the serious side, *FirST BASIC* and *S.T.O.S.* are still included, but *Neochrome* is replaced by *Hyperpaint 2*, a more powerful graphics package that takes full advantage of the STE's expanded palette. In place of the beginner's tutorial program, there's a music utility – *Music Maker 2* – that should set budding musicians firmly on the road to computerised stardom.

What's more, the Turbo Pack contains a veritable compendium of eight action games – as well as the all-important joystick that helps you get the most out of them – no need to spend extra money here!

As advertising copywriters would have it, 'there's hours of fun ahead of you' as you play *Indiana Jones and the Last Crusade*, *Dragon's Breath*, *Anarchy*, *Blood Money*, *Impossible Mission II*, *Human Killing Machine*, *Super Cycle* and *Outrun*.

Price: £349.99 including VAT

THE 1040 ST 'FAMILY CURRICULUM' PACK

The third 'all-in-one-box, get you going' ST bundle was only launched by Atari three weeks ago to move the emphasis in ST bundles away from games towards a package that is firmly aimed at providing value for every member of the family.

Hardware

The 1040 is still an STE – so it offers much improved sound and graphics capabilities as compared to the basic ST – but it arrives with a full megabyte of memory, essential if you want to get the most out of serious software applications packages.

Software

Education is the main theme in Atari's new Family Curriculum pack; the five software modules included are designed to cater for the learning needs of everyone in the family – from pre-school children through people revising for GCSEs to university undergraduates.

Module 1 caters for pre-school children who are learning to read and write, Module 2 is targetted at junior-school children who need to practice maths and spelling, while Module 3 is for students who need to revise for GCSE exams. Module 4 contains the 'creative' applications featured in the Turbo Pack – *Hyperpaint*, *Music Maker 2* and *FirST BASIC*, and for the home office or small business there's Module 5 that includes a word processor, database and spreadsheet.

There's nothing for the would-be joystick wielder, however – if it's games you're after, you'll need to nip down to the shops...

Price: £399.99 including VAT

THE MEGA STE RANGE

A trio of machines occupy the middle ground in the ST family – the Mega STEs, which offer a wider range of expansion options. Aimed at the small business or really serious home user, the Mega machines offer much more computing power.

Hardware

Ideal for running memory-intensive applications, the Mega series STEs run at 16MHz – twice the speed of the STFM and STE – but can also be switched to 8MHz in order to run software written for the first-level ST computers.

The Mega STE 1, Mega STE 2 and Mega STE 4 all come complete with a high-resolution mono monitor, and feature a detachable keyboard, which is more usual in the world of serious desktop computers where heavy use is made of the keyboard.

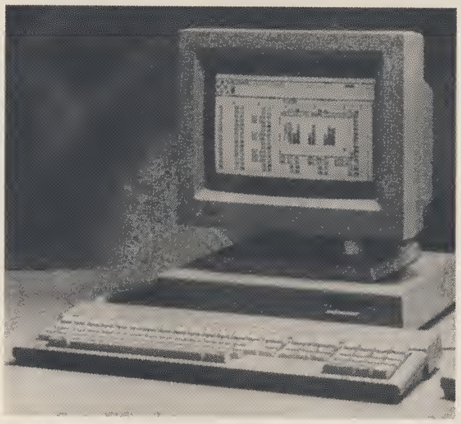
The Mega 1 arrives with 1Mb of memory installed, while the Mega 2 is fitted with 2Mb. The Mega 4 comes out of its box with 4Mb of memory in place. For those who want to have a large amount of data permanently on-line, the Mega 2 and Mega 4 also feature a 50Mb hard disk drive as standard, as well as the 1Mb floppy found on all STs.

Software

The Mega series machines are sold as stand-alone computers – you get the operating system, but will need to buy your own applications.

Prices:

Mega STE 1	**£689 (inc 15% VAT)**
Mega STE 2	**£1,034 (inc 15% VAT)**
Mega STE 4	**£1,149 (inc 15% VAT)**



• The Mega STE 4 – offers power for the more serious ST user.

THE TT WORKSTATION RANGE

Three machines sit right at the top of the ST range, and are not so much personal computers as personal workstations sold at personal computer prices. Nevertheless, they are still part of the ST upgrade path, and are based on the ST standard.

Hardware

Designed around the 68030 32-bit central processor, the TT machines can run at up to 32MHz and offer blistering speed advantages when memory-intensive applications are run – the kind of speed a real power user calls for.

Supplied complete with a high-resolution colour monitor and a 50Mb hard disk, the TT machines offer six built-in screen resolutions including a very high-resolution mono mode that offers a 1280 x 960 display. Four colour resolutions are supported, using a palette of up to 4096 colours.

On-board memory can be expanded to 26Mb, but the TT 02 arrives with 2Mb installed, the TT 04 has 4Mb and the TT 08 features 8Mb of memory. To facilitate the installation of UNIX, a range of hard disks is available, allowing units of up to 600Mb capacity to be added.

Software

The TT series machines are sold as stand-alone, high-end computers – you get the operating system, but will need to buy your own applications.

Prices:

TT 030/02	**£2,294 (inc 15% VAT)**
TT 030/04	**£2,524 (inc 15% VAT)**
TT 030/08	**£2,754 (inc 15% VAT)**

Visual Impact

• For real power users – the TT workstation tops the ST range.

THE STACY LAPTOPS

Atari seems to like doing things in threes, and its range of ST-based portables for ST users on the move is no exception. Called the Stacy, the laptop version of the ST is aimed at the more serious user – and has particular relevance to the travelling musician, as the standard ST MIDI interface is included.

Hardware

Display is achieved on a Supertwist LCD screen, and all three configurations include an internal hard disk drive. Stacy can be purchased with 2Mb of RAM and either a 20Mb or 40Mb hard drive, or as a machine with 4Mb of RAM and a 40Mb hard drive.

While the Stacy is described as a laptop, you'd need strong knees for sustained use – it's more of a portable desktop computer.

Software

The Stacy is sold as a stand-alone portable – you get the operating system, but will need to buy your own applications.

Prices:

2Mb/20Mb	**£1379.99 (inc 15% VAT)**
2Mb/40Mb	**£1609.99 (inc 15% VAT)**
4Mb/40Mb	**£2069.99 (inc 15% VAT)**

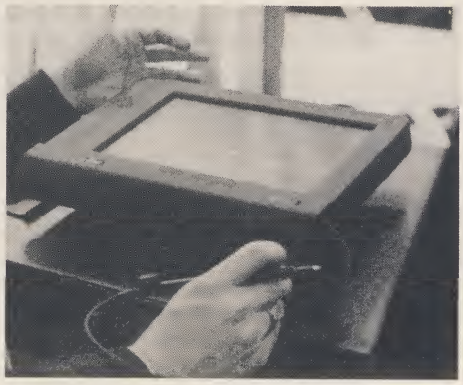
NEW ADDITIONS TO THE ST FAMILY

At the CeBIT computer fair in Hannover, Atari unveiled two new portable machines which are scheduled to be available this summer, and a new CD-ROM drive that is compatible with the STE and TT series of machines.

Atari is clearly looking at the latest technologies and incorporating them into the ST range, as these three products demonstrate...

The ST Book: a much lighter version of the Stacy portable, it takes the form of a thin notebook computer with 1Mb of RAM (upgradeable to 4Mb) and an internal 20Mb hard drive.

Price: £1,500



The ST Pad: a keyboardless notepad that has a pen-sensitive screen. It uses sophisticated algorithms to recognise the user's handwriting.

Price: £2,500

Atari's CDAR505 CD-ROM drive – a much more compact unit that its predecessor.

Price: £399.99

HARD SOFTWARE

Alex Soboslay concludes his assessment of the very best in ST software. Nominations are in the categories: Miscellaneous, Computer Aided Design and Word Processing. Find out the winners here.

MISCELLANEOUS

Knife ST.
£29.95
Hisoft
Tel: 0525 718181.

Want some *really* useful software? You don't really need route planners, calculators or clocks on your computer, but you *will* someday need this complete disk management package combining three utilities: disk sector editor, file recovery program and formatter. Imagine you've accidentally deleted a file or lost data through a crash or power fluctuation. *Knife ST* enables you to hunt down where a deleted file has got to and recover it, as well as probe the innermost secrets of your disks – it even displays intelligible File Allocation Tables or shows the clusters that belong to a specified file so you can reconstruct deleted or damaged disk sectors.

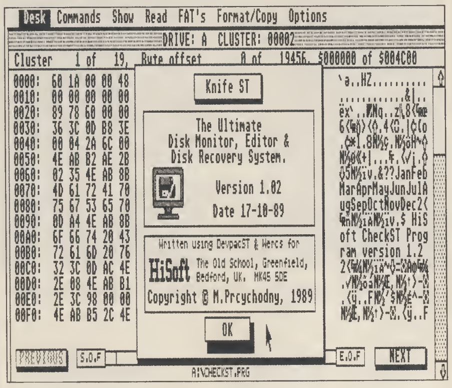
It performs a myriad of technical wonders, from loading a specified sector or track, reading a single track regardless of its format and displaying gaps, ID and data addresses, to loading an entire file into memory very rapidly and editing it. Knife ST is also the most powerful disk formatter for the ST, enabling you to format to ST or PC spec or create your own format with any number of tracks and variable sector size.

It comes with a comprehensive manual, so even if you know only a little about disk structures you can perform miracles. (If you want to know more, incidentally, don't miss the forthcoming special feature on recovering lost data in *ST Format*22.) Once you know what you're about, it's remarkably easy to use – options are selectable by keystrokes or mouse. Though many other programs, even in the Public Domain, can perform many of the same functions, the combination of features is simply unbeatable.

For the less technically-inclined, how about a Public Domain utility that enables you to grab an image from any part of the screen and save it as an .IMG, Degas or .NEO format file so you can use it in your DTP package? *Snapshot* does just that – and it's just a few quid from your local PD library or *free* on *ST Format*Cover Disk 19.

How about *FastCopy* – a PD Desk Accessory that enables you to copy whole disks at lightning speed, format a new disk as it copies and even check for viruses in the process?

CAD



```
DRIVE: A  CLUSTER: 00002
Cluster    1 of   19,  Byte offset       0 of   19456, $000000 of $004C00
0000:  60 1A 00 00 48
0010:  00 00 00 00 00
0020:  89 78 60 00 00
0030:  36 3C 0D B8 3E
0040:  00 04 2A 6C 00
0050:  4E AB B2 AE 2B
0060:  02 35 4E AB 8B
0070:  4D 61 72 41 70
0080:  75 67 53 65 70
0090:  0D A4 4E AB 8B
00A0:  6F 66 74 20 43
00B0:  72 61 6D 20 76
00C0:  32 3C 0D AC 4E
00D0:  2E 08 4E AB B1
00E0:  2E 3C 98 00 00
00F0:  4E AB B5 2C 4E
A:\CHECKST.PRG
```

The Ultimate
Disk Monitor, Editor &
Disk Recovery System.
Version 1.02
Date 17-10-89
Written using DevpacST & Wercs for
HiSoft The Old School, Greenfield, Bedford, UK. MK45 5DE
Copyright © M.Prcychodny, 1989

GFA Draft Plus 3
£99.95
GFA Data Media
Tel: 0734 794941.

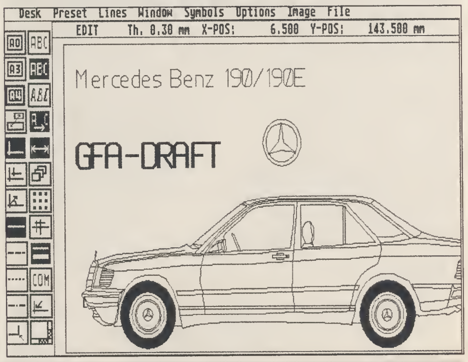
For a Computer-Aided Design package, this is exceptional value for money – it's useable on a low spec ST, but has enough features for full professional use. It comes with an extensive manual and is easy to use, column of icons to the left of the screen giving you easy access to the 24 most-used features. This means you can select or de-select each mode or tool by clicking with the mouse as well as via the more usual drop-down menus.

For more room on the screen, you can switch out the icons simply by pressing the Tab key, then press it again to return them to view. The program works with a colour monitor in medium resolution or mono monitor in high res, and gives you a work area up to 1,365 mm square, around which you can scroll with GEM scroll bars, and you can zoom in using several user-variable magnifications.

You draw lines or geometric shapes simply by clicking and dragging with the mouse; all shapes are rubber-banded for easy manipulation and modification. Text can be entered in various styles and sizes. A library of over 100 symbols is included, plus you can design your own and assign them to function keys for easy recall.

Limitations? As with nearly any piece of software, no matter how good, there are always improvements that can be made. In this case, the downsides are not vast; the program draws in two dimensions only (although GFA is working on a 3D program which is planned to be compatible), and redrawing of complex designs can take some time.

However, on the positive side once again, the program can read in Hewlett Packard Graphic Language commands as well as GFA BASIC. It is also capable of supporting DXF data format files, and this means that if required, you can export your hard worked designs to other computers and systems. You can even use them in other software packages. ■

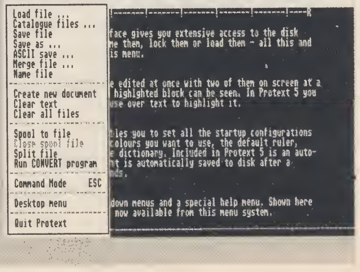

Desk Preset Lines Window Symbols Options Image File
EDIT Th. 0.30 mm X-POS: 6.500 Y-POS: 143.500 mm
Mercedes Benz 190/190E
GFA-DRAFT

WORD PROCESSING

Protext 5
£149.95 (update from v4.2 £60)
Arnor
Tel: 0733 68909

This powerful word processor has an exhaustive range of features, easily configurable to your precise needs: on installation, you run a CONFIG program to set ruler sizes, page lengths, margins, etc – and also help bars, what colours you want display text in, which dictionary and which printer driver to use, and how often to auto-save. All commands are available as keystrokes, and these are also fully redefinable in CONFIG. The program gives you unrivalled editing control – for example, you can move the cursor by any increment you choose: by character, word, line, paragraph, screen, page or document. Macros are available, and you can store up to 80 commands; there are all the usual WP features, including a very fast word count function. There is even a line drawing mode which intelligently inserts junctions and crossovers as you draw boxes with the cursor. Version 5 adds impeccable drop-down menus in addition to previous versions' command line interface (type-in commands), a new faster spelling checker which features a 120,000 word Collins dictionary, and a new disk interface which enables you to load, erase or rename files from directory.

A dazzling 36 documents can now be held in memory simultaneously, easily accessible through a drop-down menu system, with two on-screen at once. *Protext* is certainly expensive for most people, but worth it for power and features. 1Mb is recommended. ■



```
face gives you extensive access to the disk
me them, lock them or load them - all this and
is menu.

e edited at once with two of them on screen at a
 highlighted block can be seen. In Protext 5 you
use over text to highlight it.

bles you to set all the startup configurations
colours you want to use, the default ruler,
e dictionary. Included in Protext 5 is an auto-
nt is automatically saved to disk after a
nds.

down menus and a special help menu. Shown here
 now available from this menu system.
```

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VISA

Access

The ST Club

49 Stoney Street - Nottingham - NG1 1LX - (0602) 410241

ST Applications

ST Applications is a complete re-design of the ST Club Newsletter that has grown to 4,500 paid-up subscribers since we started publishing it over four years ago. Each monthly issue runs to 60 A4-pages and is packed full of high quality reading for ST users. If you would like to subscribe or receive an evaluation copy please complete the order form below.

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The Catalogue

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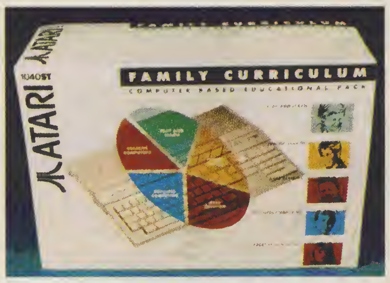

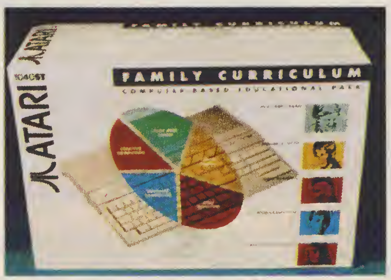

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FAMILY CURRICULUM COMPETITION

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1) Which singer fronted 'The Family Stone'. Was it?

- **A)** Harold Wilson
- **B)** Charles Mason
- **C)** Bobby Charlton
- **D)** Sly Stone

2) Tom Brown went to which school?

- **A)** Charterhouse
- **B)** Eton
- **C)** St Trinians
- **D)** Rugby

3) *We Are Family* was a hit for?

- **A)** Sister Sledge
- **B)** André Previn
- **C)** Claude Debussy
- **D)** Jimmy Hill

4) The world famous Sullivan family hailed from which part of the world?

- **A)** The Congo
- **B)** Ickleford
- **C)** Australia
- **D)** Norwich

5) The Royal Family's real name is not 'The Royal' at all it is....

- **A)** Tudor
- **B)** Jarvis
- **C)** Windsor
- **D)** Sprecklington-Mannerhouse-Dibbs

Now all you have to do to win the pack is answer the questions correctly. Fill in the form which you see at the bottom left of this page and send it, on the back if a postcard or sealed envelope to: The Family Curriculum Comp, *New Computer Express,* 29 Monmouth Street, Bath, Avon BA1 2BW. Closing date is Monday 15th April. The winner, being the first answer out of the hat, will be announced in our next supplement. Jolly good luck to you all!

WINNERS

The winners of the last two supplement's competitions would be waiting with baited breath if they ony knew who they were.

First off is the lucky recipient of the Cheetah 5V Professional keyboard. The winner is ....

Gary Lodge of Liverpool. The prize will be heading your way from Cheetah HQ in Cardiff. Thanks once again go to Cheetah for its help in this.

Next we have the ten winners of *Powermonger* from those wonderful people at Electronic Arts. A big thankyou goes to Sarah at EA for this.

The winnders are: Harbans Singh, Sean Walsh, Neil Burrows, Filip Landuyt, Gary Fairclough, RA Jacob, Simon Taylor, W Stokes-Clarke, Ian Timson, D Holdstock, and last but not least, Steven Robinson. Prizes are in the post from us ■

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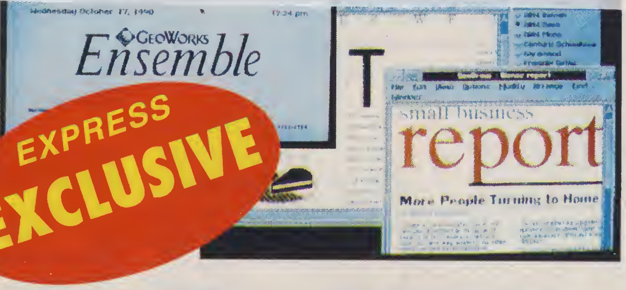
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